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Archives of Dermatology and Syphilology

VOLUME 13 MAY, 1926 NUMBER 5

DISEASES OF THE ORAL MUCOSA*

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AND
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From an embryologic point of view, certain diseases of the oral and nasal mucosa are logically related to those on the cutaneous surface. A common ectodermic origin brings affections of these structures in closer relation to each other than with the diseases of the deeper digestive tract which originates from the entoderm. Furthermore, eruptions of the oral cavity are objectively demonstrable, and not infrequently they are a part of the clinical picture of a cutaneous eruption. Specialties in medicine frequently overlap, and borderline conditions are encountered which may pertain to general medicine, surgery or to the branch which has devoted particular attention to a certain class of affections. The implication of the mucous membranes in the acute exanthems is almost invariable. The pharyngeal congestion in scarlatina and the Koplik spots in measles aid materially in diagnosis before the skin eruption appears.

To review the literature of mouth eruptions and to give a clinical and pathologic description of all of them would require a monograph. This article is intended as a brief outline of a somewhat neglected subject, in the hope that interest may be aroused in this interesting and important phase of dermatology. For an enumeration of most of the diseases of the mouth the reader is referred to Baker's [1] article on mouth conditions.

DIAGNOSTIC GENERALIZATIONS

The diagnosis of diseases of the skin is based chiefly on the location, distribution, grouping and characteristics of the so-called primary lesions, together with the secondary changes which may result from infection, traumatism or other factors. Visual impressions, the result of prolonged experience, usually enable the clinician to make a rapid diagnosis of pathologic skin conditions without conscious deduction. On the mucosa,

* Read at the forty-ninth Annual Meeting of the American Dermatological Association, Washington, D. C., May, 1925.

1. Baker, E. H.: Dental Cosmos **54**:694, 1912.

lesions present peculiarities not seen on the skin, and consequently the question of diagnosis is more complicated. Color contrast is less striking, owing to the greater transparency of the former tissue; and because of moisture and resulting maceration primary lesions undergo modification, or they may lose their characteristics by secondary infection. Vesicles and bullae become erosions; papules are covered with a grayish membrane and may present a central erosion or ulceration. The grouping and distribution which aid diagnosis of skin conditions fail when lesions occur in the mouth. Pathognomonic features of individual lesions may at times be sufficient to establish a diagnosis, as in carcinoma; but we are often obliged to base the diagnosis on the associated cutaneous lesions, or on the subsequent development of them as in pemphigus.

Diagnostic ability for mucous membrane lesions can be acquired only by constructing a new series of visual impressions based on observation of such lesions alone or combined with a study of their associated prototypes in the skin. The encrusted erosions on the lips in erythema iris have little resemblance to the typical lesions on the hands; but we know from repeated observations that they have a common origin (fig. 1). Primary lichen planus of the mouth may be mistaken for leukoplakia; when associated, however, with lesions on the skin or glans penis we observe its characteristics more closely. The diagnosis of drug eruptions on the oral mucosa is difficult until we observe the skin or elicit the information that a medicine has been taken. A primary ringed erythema of the tongue remained a mystery until it was cleared by its constant association with a coal tar product taken for headache. Erosions of the lips or mouth have disappeared after the use of a tooth paste or powder has been discontinued. There are a large number of drugs that may produce lesions of the oral cavity. For a discussion of this particular subject with complete review of the literature the reader is referred to an article by Abramowitz.[2]

Lesions in the mouth are modified by traumatism to which they are subjected, by irritating articles of food or drink, and by secondary infection from micro-organisms which accidently or normally are found there.

ORAL AND NASAL MUCOSA AS PORTAL OF ENTRY OF SYSTEMIC INFECTIONS

As a portal of entry of local and systemic infections the oral and nasal mucosae have received careful and repeated study. The reader is referred to recent articles by MacNevin and Vaughan [3] for an abstract of the literature on mouth infections and their relation to systemic dis-

2. Abramowitz, E. W.: M. Times **52**:105, 1924.

3. MacNevin, M. G., and Vaughan, H. S.: Joseph Purcell Research Memorial **31**:107, 1924.

Fig. 1.—Erythema multiforme iris. Iris lesions on hands; crusted lesions on lips.

eases. The presence of infectious foci in the teeth, gums, tonsils and sinuses has been definitely shown to originate various systemic conditions. As to the etiologic relationship of such foci to diseases of the skin, our knowledge is yet vague. In our own experience, we have noted the coincidence of erythema nodosum and erythema multiforme with tonsillar abscesses and infected teeth. In a case of generalized redness, exfoliation and thickening of the skin with associated lymph node enlargement, the condition entirely disappeared after extraction of badly

Fig. 2.—Chronic lymphangitis of upper lip: elephantiasis nostras.

Fig. 3.—Herpes labialis.

diseased teeth. A similar result followed a like procedure in a case of clinically diagnosed dermatitis herpetiformis. Purpura associated with mouth sepsis was also observed to disappear after attention to the local infection. In attempting to uncover the origin of chronic urticaria, the possibility of a bacterial protein sensitization due to an oral infection should be kept in mind. The mouth, therefore, should not be overlooked in searching for a possible etiologic factor in skin diseases of indefinite etiology. On the other hand, general deductions should not be too hastily made from a limited number of observations.

Infections of the lips or anterior nares may be traced to the deeper parts of the mouth, throat or sinuses. The portal of entry for the streptococcus in facial erysipelas may be found at times in the nose. Sycosis of the upper lip may originate from a nasal discharge. Recurrent lymphangitis and chronic lymphangitis (elephantiasis nostras) may be caused by infections in the mouth, nose or sinuses (fig. 2).

Tuberculosis of the anterior nares is generally secondary to a deeper and primary involvement of the throat, nose, or lung, as also is tuberculosis of the tongue and mouth. A patient with an extensive lupus of the face who was under observation for many years was first seen with a papillary outgrowth of the soft palate. He then developed a fungating tuberculosis of the anterior nares, which rapidly involved the entire face.

Fig. 4.—Zoster of face with lesions on lips and roof of mouth.

At the same time the infection spread through the nasal ducts to the eyes, causing a keratitis and iritis and finally involvement of the entire eyeballs with loss of vision. In the tropical disease called gangosa, the infectious agent invades the mucosa from the throat in like manner, destroying the eyes, nose and practically the entire face. In Guam and other Pacific islands, gangosa has been largely controlled by arsphenamine. A positive Wassermann reaction has been found in these patients. The affection is closely related to syphilis and yaws, but because of the uniform clinical picture the infectious agent is probably biologically different. Yaws may involve the mouth, as also may rhinoscleroma.

The chronic infective granulomas at some time in their course are often present on the visible mucous membranes. There is a growing

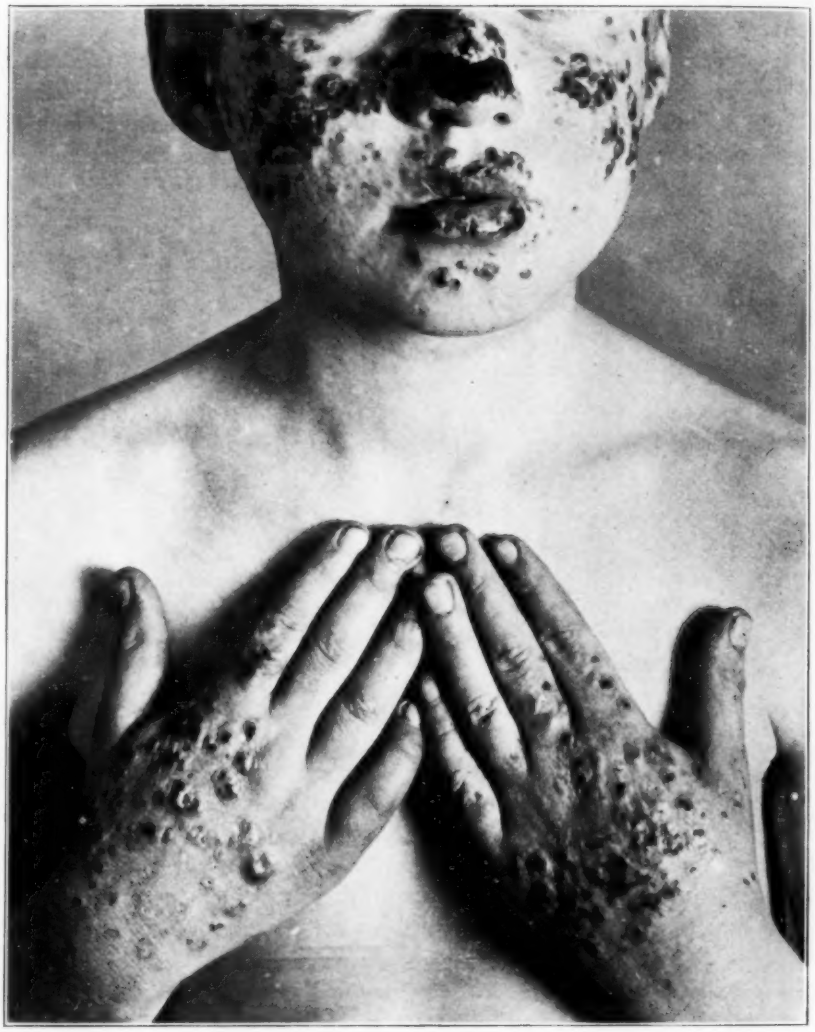

Fig. 5.—Hydroa aestevale with lesions on lips.

Fig. 6

Fig. 7

Fig. 6.—Eruption on lips occurring in a case of generalized psoriasis (Dr. Max Scheer's patient).

Fig. 7.—Cheilitis exfoliativa with a few herpetic vesicles.

Fig. 8

Fig. 9

Fig. 8.—Mucous retention cyst.

Fig. 9.—Irregular pigmentation of tongue of unknown duration and etiology.

belief that the bacillus of lepra may find its first lodging place in the mucosa of the nasal passages or in the upper respiratory tract. The characteristic micro-organisms can usually be demonstrated in the nasal secretion of lepers, especially after the production of a coryza by the administration of iodide of potassium.

Syphilis, tuberculosis, glanders, actinomycosis and other members of this group of infections may involve the mucous membranes primarily as a result of the general infection, or by direct extension from the skin lesions. Certain general intoxications of the most diverse origin, comprising exudative erythema, urticaria, purpura, fungus infections and drug rashes may occasionally be seen in the mouth or give rise to gastro-intestinal or visceral complications of a serious nature.

Fig. 10

Fig. 11

Fig. 10.—Papillomas of tongue (clinical diagnosis).
Fig. 11.—Cavernous angioma of tongue.

The mucous membrane may be accidentally infected in the course of some pyogenic affections by direct extension from the skin, through the medium of an infected finger or in other ways. A generalized *Streptococcus viridans* infection, with positive blood cultures, in a person with an old case of syphilis impressed us with the great importance of attention to mouth hygiene. This patient had an old aortic lesion on which the new infection was implanted and thus became activated. If the mouth infection in which the organisms were found had been recognized earlier, the general infection might have been foreseen and prevented.

The organism of actinomycosis as a rule finds its portal of entry through a carious tooth or through a break in the continuity of the mucous surfaces. Phosphorus necrosis of the jaw usually commences

at the roots of decayed teeth. It has become much less frequent since the prohibition of white phosphorus in the manufacture of matches and the careful directions regarding the care and preservation of the teeth by the match companies. Persons engaged in the manufacture of mineral acids develop caries of the teeth from exposure to the fumes in badly ventilated rooms. Necrosis of the teeth and pyorrhea occur in many occupations which bring the workmen in contact with lead, copper, mercury and chlorine or its products. In trades which fill the air of the work room with fine dust particles and in sugar refineries the gums become irritated, and acids develop which lead to dental caries. The deposition of lead and copper in the gums leads to the blue line of the

Fig. 12

Fig. 13

Fig. 12.—Cavernous angioma of lip and cheek.

Fig. 13.—Lymphangioma circumscriptum of under surface of tongue (lyphangiectodes).

former and the greenish discoloration of the latter. The modern use of the bismuth salts in the treatment of syphilis has added a brownish-black color line to this variegated clinical picture. The workmen's compensation act leading to more careful industrial hygiene has done much to prevent or limit many of these unfortunate by-effects of dangerous occupations. Much credit is due to the dental profession for emphasizing the importance of early and proper hygiene of the mouth as a prophylactic against dental caries and its resulting sequelae.

Brief mention may be permitted of certain dermatologic affections in which mouth lesions may antedate those of the skin or viscera. Wise [4] has called attention to a persistent, recurring, mild but annoying

4. Wise, Fred: J. Cutan. Dis. **31**:85, 1913.

stomatitis which may occur very early in pernicious anemia. The symptoms are mostly sensory with very little objective evidence of tissue alteration. We have several patients now under observation who present a similar condition in the mouth, but there is as yet no evidence of pernicious anemia. Schamberg [5] has observed mouth lesions in connection with leukemia. Keyser and Walters [6] have called attention to atrophy of the lingual papillae in a case of carcinoma of the suprarenal associated with unusual endocrine manifestations. Gougerot [7] has described atrophy of the salivary and mucous glands which may be an ectodermal defect or an endocrine disturbance; secondary infections are common. The serious and often fatal disease called pemphigus and its variant pemphigus vegetans often show erosions in the mouth weeks or months before the appearance of vesicles or bullae on the skin. When

Fig. 14.—Lymphangioma of lips (clinical diagnosis).

such lesions are accompanied by persistent constitutional disturbances and loss of weight one should suspect a beginning pemphigus. Erythema multiforme can usually be differentiated by sudden onset, short duration and concomitant skin lesions. There are, however, erosions due to recurring benign vesicular or bullous lesions of the mouth which come and go for years without any effect on the general health. These may be analogous to recurring herpes (figs. 3 and 4) of the lips and genitals, and confusion with pemphigus can be avoided by the history of previous attacks and their more limited distribution. The possibility of a drug eruption must also be considered in such cases. Recent bacteriologic

5. Schamberg, M. I.: The Reciprocal Influences of Morbid Conditions of the Mouth, Jaws and General Economy, J. A. M. A. **59**:1883, (Nov. 23) 1912.

6. Keyser, L. D., and Walters, W.: Carcinoma of the Suprarenal Associated with Unusual Endocrinal Manifestations, J. A. M. A. **82**:87 (Jan. 12) 1924.

7. Gougerot, M.: Bull. Soc. franç. de dermat. et syph., Nov., 1925, no. 8, p. 376.

investigation with the contents of herpetic vesicles shows that when inoculated on the cornea of rabbits or directly into their brain a type of encephalitis develops. We have observed for a number of years a patient who first presented erosions of the mouth and on the genitals which simulated syphilis, and who was treated with arsphenamine for months with no effect. Her Wassermann reaction was always negative. She later developed bullous and vegetating lesions on the face, scalp, axillae and groins which persisted with varying intensity for two years or longer. The patient lost weight, became extremely anemic and had many febrile attacks. A diagnosis of pemphigus vegetans was made by several good clinicans. In fact, no other diagnosis was possible with our present knowledge. She went abroad, recovered entirely and has remained well for the past two years.

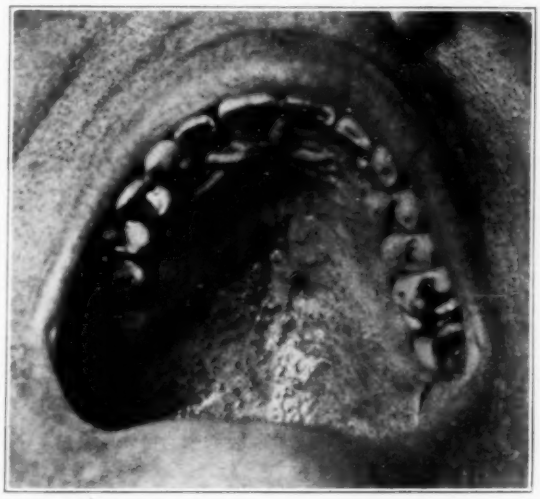

Fig. 15.—Mucous adenomas of roof of mouth (pathologic diagnosis).

A congenital tendency to bullous formation after slight traumatisms (epidermolysis bullosa hereditaria) involves the lips and mouth, as well as the skin. It causes erosions followed by atrophic changes which may seriously impair the patient's nutrition. It is, fortunately, a rare condition; and its nature is often overlooked. If regarded as an infection and treated with irritants, new lesions may be produced. Hydroa aestevale may involve the lips, as shown in figure 5. Severe types of ichthyosis in infants may involve the mouth to a serious degree.

Ulceromembranous stomatitis (Plaut-Vincent) may simulate closely severe mercurial stomatitis. The manifestations of the latter may be due to a coincident infection with spirillum and fusiform bacillus. Mercurial stomatitis may follow external applications of the drug as well as its internal use. We recently saw a severe type attended with profuse

salivation and numerous erosions covered with a diphtheroid membrane in a patient whose leg ulcer had been treated with calomel powder. Every syphilitic patient should have his teeth and gums put in order, as poor dental hygiene favors mercurial stomatitis.

The catarrhal inflammation of the skin called eczema often invades the lips secondarily and causes modification of the normal evolution of surface epithelium, with scaling, crusting and painful fissures. Psoriasis may also invade the mucocutaneous epithelium (fig. 6). Cheilitis exfoliativa is often associated with and may be a local manifestation of so-called seborrheic dermatitis (fig. 7), and must be differentiated from Fordyce's disease. A more severe type is encountered with the formation of thick brownish-black crusts easily detached and leaving a glazed,

Fig. 16

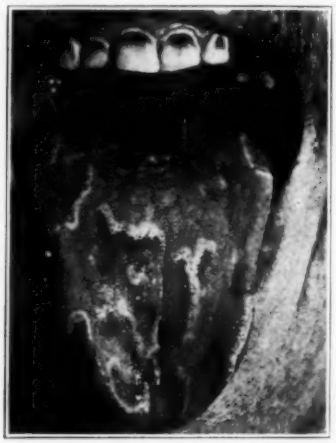

Fig. 17

Fig. 16.—Moeller's glossitis (female adult).
Fig. 17—Lingua geographica; male adult (Dr. Wise's patient).

slightly oozing surface, a new crust gradually forming. We have recently had under our care a neurotic woman who presented both lips covered with a crust half an inch thick, which was readily removed. A few days later it reformed, and on further investigation pronounced pharyngeal anesthesia was noted with numerous anesthetic areas over her body not related to definite nerve distribution. It was thought the eruption was a self-induced one, but attempts to detect the use of any irritant proved futile. She had at the same time pyorrhea and sodden gums. The suggestion was made that the condition might be due to infection from the gums favored by biting the lips or by sucking and working them under the teeth. MacLeod has observed several instances

Fig. 18

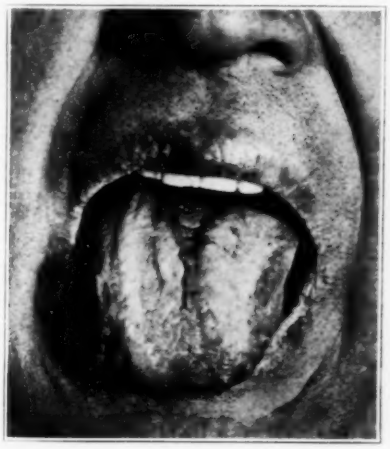

Fig. 19

Fig. 18.—Black, hairy tongue (male adult).
Fig. 19.—Lichen planus of tongue associated with a generalized eruption.

Fig. 20

Fig. 21

Fig. 20.—Lichen planus of tongue (also of skin).
Fig. 21.—Lichen planus of tongue (also of skin).

of this condition in neurotic subjects. Glandularis apostematosa (cheilitis glandularis) is associated with hypertrophic mucous glands. The lips are swollen and studded with small nodules about the glandular orifices, from which a mucopurulent secretion can be expressed. Both types of cheilitis may be improved and even cured with the roentgen ray or radium.

A mucous retention cyst of the lower lip (originally described by Sutton) is illustrated in figure 8. These cysts often return after excision. They may be cured with desiccation. Radium and the roentgen ray have failed in our hands.

Fig. 22.—Lichen planus of mucous surface of cheek (also a generalized eruption on body).

In Addison's disease brown or tawny spots of the buccal mucosa are seen. In so-called vagabond's disease (pediculosis corporis), pigmentation of the mucous membrane of the mouth may accompany or follow pigment changes in the skin. Because of the malnutrition and cachexia which these patients present, confusion with Addison's disease can easily take place if one is not familiar with the changes in the skin met with in body pediculosis. We observed a primary melanotic tumor of the gums followed by rapidly developing metastasis to the viscera. This observation was confirmed by a careful necropsy. Again, we have noted one year after the removal of a primary melanotic growth from the skin

of the chest a well defined, bluish-black tumor of the gums which developed with a general dissemination of the melanoma.

Isolated instances of pigmentation of the tongue, gums or other portions of the mouth are occasionally encountered, and such cases are to be found in the literature. In the accompanying illustration (fig. 9) several large areas of black pigmentation on the lateral margin of the tongue were observed in a man who was in excellent health. He had never used any local application or taken any drug which could have caused the condition. Pigmentations like the one in question are at times seen in the negro, in orientals and in some of the inhabitants of the Balkan states.

Nitrate of silver used as a local application to the throat may be followed by a generalized argyria or by discolored patches in the mouth. We have noted several instances of permanent staining of the conjunctiva by long continued local applications of argyrol.

Fig. 23.—Lichen planus of mucous surfaces of lips (lichen planus on body also).

ASSOCIATION OF LESIONS OF TONGUE AND ORAL CAVITY WITH THOSE ON GENITAL MUCOSA

Aside from the not infrequent association of mouth and skin lesions, certain pathologic states of the tongue and oral cavity are found in conjunction with similar changes on the genital mucosa of men and women. This is true of pemphigus, pellagra, lichen planus, herpes and other conditions. We have seen two cases of painful superficial inflammation of the mouth and tongue associated with a like condition of the vulva and vagina. One of these patients, a woman, 60 years old, suffered intensely from the inflammation of the mouth which showed itself as large, red, smooth, shiny patches over the dorsum of the tongue and the inner sides of the cheeks and lips. The pain and burning sensations were like those described by the subjects of Moeller's glossitis. In this case Vincent's organisms were found in the mouth and vagina and may have been the etiologic factor.

VARIOUS DISEASES OF ORAL MUCOSA

Periadenitis Mucosa Neurotica Recurrens.—This condition was first described by Loblowitz [8] and has been independently studied by Sutton.[9] Small shotlike papules which break down into sharply circumscribed ulcers occur as a relapsing affection of the mouth. The ulcers are painful, last a week or ten days and then heal with slight or no scarring. We have observed identical lesions in the vaginal and urethral mucosa which likewise relapsed from time to time over a period of years. In the latter case the patient's mother was the subject of a like condition. In their mode of origin as rather deep-seated, hard papules, soon breaking down into ulcers, as well as appearing in successive crops, their possible relationship to papulonecrotic tuberculid of the skin suggested itself.

Fig. 24.—Lupus erythematosus of face and lower lip (Dr. Parounagian's patient).

Benign Tumors.—Various benign tumors and congenital anomalies of development are occasionally encountered on the tongue and other portions of the mouth—papilloma, fibroma, angioma, lymphangioma (figs. 10 to 15 inclusive). As a rule the diagnosis is easily made. Such lesions may be removed with radium or with electrocoagulation. Occasionally, the diagnosis is difficult. In one instance a lesion on the dorsal surface of the tongue resembled a papilloma, but on microscopic examination it proved to be syphilis.

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8. Loblowitz, J.: Arch. f. Dermat. u. Syph. **102**:191, 1910.

9. Sutton, R. L.: Diseases of the Skin, ed 5, St. Louis, C. V. Mosby Company, 1923, p. 1176.

Fig. 25

Fig. 26

Fig. 25.—Lupus erythematosus of mucous surface of lower lip (lesions on face also).

Fig. 26.—Lupus erythematosus of tongue (lesions on face also).

Fig. 27

Fig. 28

Fig. 27.—Lupus miliaris. Lesions on lips, nares and back of neck (pathologic confirmation).

Fig. 28.—Tuberculosis of mucous surface of lips and cheek (biopsy).

Serious mucous membrane affections may be overlooked or disregarded by the patient because subjective sensations are absent, while, on the other hand, profound mental distress is often caused by the most innocent or trivial departure from the normal. Fear of cancer implanted in the mind of a neurotic subject is difficult to allay. A woman was recently under observation with persistent mental depression caused by hypertrophy of the foliate papillae on the side of her tongue opposite the last molar tooth. She was obscessed with the belief that her trouble was cancer, and consulted many physicians at home and abroad. Although the same condition was found on the opposite side of the tongue, it was impossible to convince her that it could not lead to cancer.

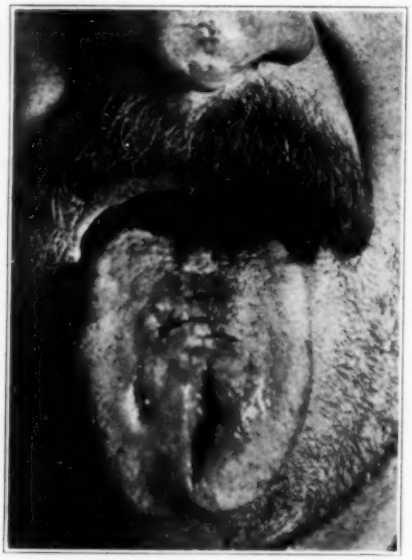

Fig. 29.—Tuberculosis of tongue (pulmonary tuberculosis).

Butlin and Spencer [10] refer to this condition, which they state is more frequent in women and is often attended with persistent pain and fear of cancer. We have encountered numerous examples of this complaint, mostly in woman. At times there is fear of syphilis rather than of cancer.

Moeller's Glossitis.—In Moeller's glossitis, also described as burning tongue or neuralgia of the tongue, the sensory disturbance is at times intolerable and cannot be explained by the visible alterations in the surface changes which accompany it. Frequently the site of the pain is only slightly reddened with the margins sharply defined and whiter

10. Butlin, H. T., and Spencer, W. G.: Disease of the Tongue, Cassel and Co., 1900, p. 413.

than the adjacent epithelium. One or more patches may be present from 1 to 3 or 4 cm. in diameter. Often there is denudation of epithelium. In some patients the lesions change their size and form as in marginate glossitis, but more often they remain fixed. The pain, though usually limited to the areas denuded of epithelium, may be felt in other parts of the tongue. A neuritis of some of the terminal fibers of the lingual nerve offers the most plausible explanation of this intractable condition (fig. 16).

Moeller,[11] in his report of six cases, called attention to a new affection of the tongue characterized by sharply defined red spots with severe burning sensations greatly aggravated by contact with food. The condition has subsequently been described by numerous German, French and

Fig. 30

Fig. 31

Fig. 30.—Tuberculosis of tongue (pulmonary tuberculosis).

Fig. 31.—Tuberculosis of tongue (pulmonary tuberculosis).

English observers. Harris,[12] in this country, has analyzed twenty cases, in only three of which the patient recovered. Engman and Weiss [13] reported a case of rapidly changing marginate glossitis with pain cured by removing infected teeth and treating an accompanying pyorrhea. They also mention mouth infections due to the monilia, one example of which we have seen. Goodale [14] has noted the coexistence of margi-

11. Moeller: Deutsch. Klin., 1851, no. 26, p. 273.

12. Harris, F. G.: J. Cutan. Dis. **33**:742, 1915.

13. Engman, M. F., and Weiss, R. S.: Monilia Candida Infection of Mouth, Arch. Dermat. & Syph. **1**:119 (Feb.) 1920.

14. Goodale, J. L.: Am. J. M. Sc. **112**:545, 1896.

nate glossitis (geographic tongue) with pain and burning sensations. It is of course conceivable that the long persistence of marginate glossitis might result in irritation of the nerve terminals with resulting subjective sensations. In the great majority of cases reported and in those observed by us a differential diagnosis could readily be made. Lingua geographica is painless and occurs most frequently in the young, while the glossitis of Moeller has been observed almost exclusively in neurotic women in middle life. The red, denuded and painful areas in Moeller's glossitis are more persistent and often lack the characteristic margin of the former. In two of our patients in whom the pain was described as almost intolerable, little was to be seen on the tongue with

Fig. 32

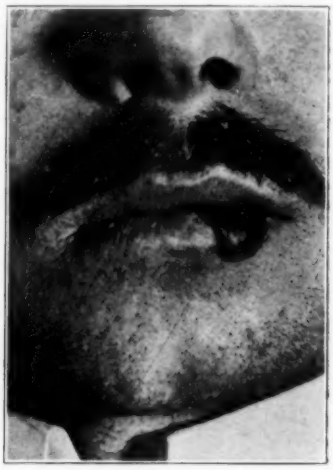

Fig. 33

Fig. 32.—Tuberculosis of under surface of tip of tongue (pulmonary tuberculosis).

Fig. 33.—Tuberculosis of lower lip, simulating a chancre or a gumma (patient of Dr. Ludwig Weiss).

the exception of a slight redness. All local applications failed to afford relief, and the same result followed a number of fractional roentgen-ray exposures.

Erythema Migrans.—Erythema migrans or lingua geographica occurs almost exclusively on the dorsum anterior to the circumvallate papillae as sharply circumscribed red areas with a narrow yellowish-white border. The areas rapidly enlarge to circles or irregularly shaped patches, from which the various descriptive names have originated (fig. 17). The circular or marginate outlines change from day to day, disappear for a time and recur over an indefinite period. Children are said to be affected more often than adults. In our clinic, however, we see it more frequently in the latter. As it is not attended with subjective sensations, its

presence is usually revealed in our routine examination of the mouth in patients who have a skin disease or syphilis. Its long duration is shown by Forchheimer's observation of a case which began at the age of 5 and recurred until a later observation at 24. Pediatricians inform us that the long duration is not uncommon. We have seen it develop in pregnancy and disappear spontaneously after confinement. Its etiology is unknown. No definite organism has been found with the exception of the usual types normally present in the mouth. Syphilis is not concerned in its causation. A number of histologic examinations have been made, notably those of Goodale, who found chiefly an infiltration of the rete cells with leukocytes, causing softening and exfoliation of the overlying epithelium. Parrot mentions the presence of lymphoid cells about the vessels in the subepithelial tissues. Both he and Caspary regard the deeper tissues rather than the epithelium as the original seat of the

Fig. 34

Fig. 35

Fig. 34.—Syphilis; mucous patches on lower lip.
Fig. 35.—Syphilis; mucous patches on tongue.

trouble. Treatment by local applications is without result. Howard Fox employed roentgen rays, with a cure which had persisted for several months at the time the patient was shown before the New York Dermatological Society. We treated two patients with fractional doses of the roentgen ray. In both instances the eruptions disappeared promptly. One patient failed to remain under observation. In the other case the eruption recurred in a few weeks.

Black Tongue.—Black tongue or black hairy tongue is a comparatively rare condition, which usually occurs on the dorsum of the tongue anterior to the triangle formed by the circumvallate papillae. Patches, black, bluish-black, brown or yellow are made up of hairlike filaments from ¼ to ½ inch (0.6 to 1.2 cm.) in length, which are intertwined in various fashions (fig. 18).

Heidingsfeld,[15] from a careful histologic study of the condition, concluded that the elongated and stratified filaments originate from abnormal papillae within the epithelial covering of the mucous membrane. The cells making up the hairlike processes are similar to those in the stratum corneum of the skin. The color is due to changes in the horn cells analogous to that which is seen in certain types of hyperkeratosis of the cutaneous surface, or to pigment from substances taken into the mouth. The condition is not due to micro-organisms, but, in Heidingsfeld's opinion, to some congenital abnormality which in later life becomes active. This view has also been held by other observers. The foregoing description applies to the type which is persistent for years.

Fig. 36.—Aphthous ulcer on upper lip.

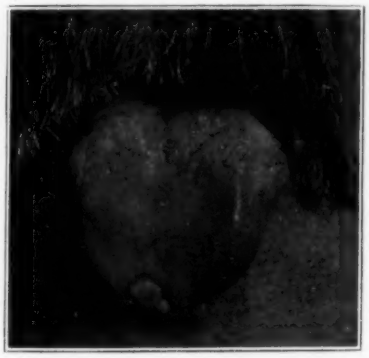

Fig. 37.—Aphthous ulcer at tip of tongue.

Pseudoblack tongue due to local irritants, or to astrigent mouth washes containing coloring matter, etc., is to be differentiated from the true form. Oppenheim [16] has shown that hypertrophy and hyperkeratosis of the filliform papillae in this region can be experimentally produced by daily applications of tinctures containing vegetable coloring matter. He compares the artificially produced condition of the tongue with hyperkeratosis of the skin from tar and aniline products. Herman Prinz [17]

15. Heidingsfeld, M. L.: J. A. M. A. **55**:2117, 1910.
16. Oppenheim, Moriz: Wien. klin. Wchnschr. **30**:712, 1917.
17. Prinz, Herman: Pacific Dental Gaz. **33**:109, 1925.

Fig. 38.—Perlèche; female adult (see fig. 80).

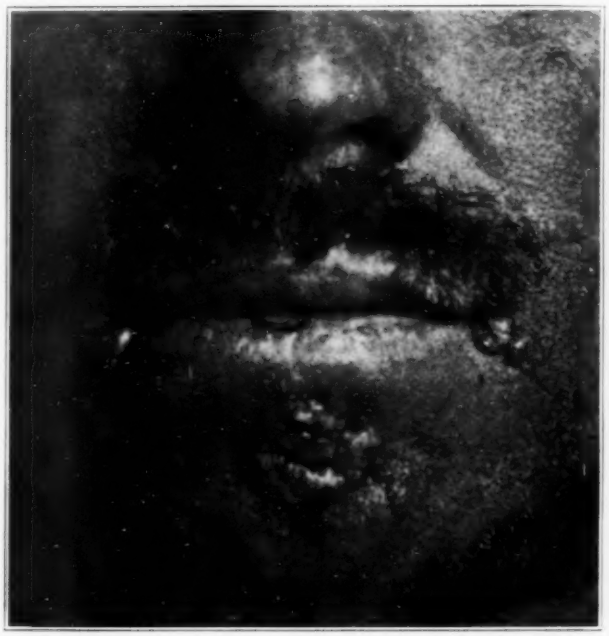

Fig. 39.—Syphilis; hypertrophic papules, split papules and mucous patches.

reviewed the various theories as to the etiology of black tongue. He believes the pigmentation of the elongated filliform papillae is always due to a deposit of pigment from external sources. He was able to demonstrate iron pigment by chemical tests on the filaments of black tongue, which he believes is due to a chemical reaction between the hemoglobin in the blood and certain sulphur and ammonia compounds derived from the decomposition of protein débris or tobacco smoke.

Lichen Planus.—It has been established by numerous clinical and histologic studies that lichen planus occurs in the mouth in association with the skin eruption in perhaps half the cases. A routine examination of the oral mucosa is made in all our cases of lichen planus, and from repeated observations a conception of the varied clinical appearance of the mouth lesions has been acquired. Lesions on the glans penis or inner surface of the prepuce may occur simultaneously with those in the mouth, and suggest a diagnosis of syphilis. In either location they may precede the outbreak on the body by weeks or months. Lichen

Fig. 40

Fig. 41

Fig. 40.—Syphilis; hypertrophic mucous patch on upper lip.
Fig. 41.—Syphilis; hypertrophic mucous patches and split papules.

planus in the mouth is generally asymptomatic, not often subject to erosions or desquamation, and is never followed by malignant change. There are few recorded observations as to the duration of the mucous membrane lesions. They often persist after the disappearance of the skin manifestations and are less readily influenced by treatment. We have one case in a woman advanced in life in whom the eruption on the tongue has existed for more than ten years. Areas of smooth atrophy are present with white patches very much like a syphilitic glossitis. The lesions on the tongue were coincident with a universal lichen planus which has relapsed from time to time. When primary in this locality its interest lies chiefly in the question of diagnosis. Consideration must

be given to the several phases of mucous patches and to epithelial changes after the involution of syphilitic lesions as well as to syphilitic and nonsyphilitic leukoplakias. On the surface of the tongue diffuse grayish-white patches from the confluence of individual lichen planus lesions may be mistaken for leukoplakia. A puzzling and instructive case of this kind was under our observation some years ago. The patient had a well marked leukoplakia on the dorsal surface of the tongue, for which no cause could be found. He was not a smoker; there was no history of syphilitic infection, and repeated blood tests were negative. Later he consulted Dr. Brocq, of Paris, who made a diagnosis of primary lichen planus of the tongue. The possibility of the long persistence of primary lichen planus of the mucous membranes has been confirmed by the subsequent appearance of typical lesions on the skin and also by

Fig. 42

Fig. 43

Fig. 42.—Syphilis; hypertrophic mucous patch on tongue; split papules at commissures (Dr. Parounagian's patient).

Fig. 43.—Syphilis; hypertrophic mucous patches and papules.

histologic studies. The latter show the same epithelial changes, together with a sharply limited infiltration of lymphocytes with a few plasma cells in the papillary bodies.

The clinician, by carefully correlating his observations of oral and skin lesions in this condition, may in time be sufficiently skilled to diagnose the various phases of lichen planus of the mouth irrespective of the cutaneous eruption. The most frequent site for these lesions is on the inner sides of the cheeks along the line of the closed teeth. We may here encounter gray miliary papules alone, or arranged in ringed or crescentic patches, or as a network of fine white lines. We have observed on the

Fig. 44

Fig. 45

Fig. 44.—Ulcerating nodular syphilid of the buccal commissures.
Fig. 45.—Chancre of upper lip; female; three weeks' duration.

Fig. 46

Fig. 47

Fig. 46.—Chancre of lower lip; female; four weeks' duration.
Fig. 47.—Chancre of lower lip and commissure; female; duration, three weeks.

mucous membrane over the hard and soft palate closely aggregated lichen papules where the characteristics of the individual papules were preserved.

Figure 19 shows a diffuse grayish-white change in the surface epithelium over the anterior half of the dorsum of the tongue, with individual lesions at the borders. In figure 20 and figure 21, characteristic lichen papules by coalescence have produced a mosaic-like appearance which differentiates it sharply from leukoplakia. Figure 22 depicts lichen planus of the mucous surface of the cheek, and figure 23 shows the same disease of the lips.

Lupus Erythematosus.—The mucous membranes are occasionally invaded by lupus erythematosus, the most usual site being the free

Fig. 48

Fig. 49

Fig. 48.—Chancre; duration, five weeks.

Fig. 49.—Multiple chancres (Dr. Parounagian's patient).

border and lingual surface of the lower lip as an extension from the skin (fig. 24).

Multiple foci of lupus erythematosus are frequent and may involve the lips and mouth primarily, but in the great majority of cases there are lesions on the face. Eversion of the lips shows in the early stages a swollen mucous membrane more intensely red than the adjacent tissues; later, an atrophic grayish-white center with a hyperemic zone (fig. 25). At times the lip may be very dry and covered with adherent scales. Occasionally there are erosions. Telangiectasia may be detected.

On the inner sides of the cheeks we have observed sharply circumscribed, slightly edematous, hyperemic areas with slight atrophy in

patients with lupus erythematosus of the face. Occasionally there is erosion, and at times there may be whitish areas in the eruption that may suggest leukoplakia or lichen planus. In one patient with a persistent symmetrical erythematous eruption of the face of doubtful nature the diagnosis was made clear by an inspection of the mouth. Along the line of the closed teeth on the inner side of the cheeks, grayish-white discolorations were observed. In places there were superficial erosions surrounded by a zone of dilated vessels and a marginal infiltration. The diagnosis of either a doubtful skin or mucous membrane affection may be helped by a consideration of the close relations of the two structures. The exceptional occurrence of lupus erythematosus on the dorsum of the tongue is shown in figure 26 which was associated with typical lesions on the face. The small patches were slightly depressed and covered

Fig. 50

Fig. 51

Fig. 50.—Chancre following infection in fissure of lower lip (male).
Fig. 51.—Keloid of lower lip; clinical diagnosis. Lesion cured with radium.

with keratotic epithelium. We have found lupus erythematosus of the mucous surfaces recalcitrant to treatment. Good results may at times be obtained with the beta rays of radium, with the actual cautery and with electrodesiccation.

Tuberculosis.—Tuberculosis of the oral cavity and contiguous mucous surfaces presents a varied clinical picture and offers numerous problems in diagnosis. A large fungating granuloma of the lips and commissures in a child was not recognized as tuberculosis until it extended to the face as a typical lupus vulgaris. Superficial ulcers of the lips of rounded or linear outlines have been observed in conjunction with lung tuberculosis. Miliary tubercles of the lips and anterior nares (fig. 27) occur as a characteristic of the clinical entity known as miliary

lupus. We occasionally see the soft palate covered with yellowish miliary tubercles from lung or larynx tuberculosis. A tuberculous ulcer just beyond the commissure is shown in figure 28. On the tongue tuberculosis assumes a variety of forms, of which the linear or fissured type is perhaps the most characteristic (figs. 29, 30 and 31). Figure 32 depicts a tuberculous ulcer of the tip of the tongue. Such lesions are likely to be painful. On the side of the tongue a trauma produced by a rough tooth became indurated, papillomatous and simulated closely an epithelioma. This was removed by a surgeon with a wedge-shaped incision and was shown to have a typical tuberculous structure. On the

Fig. 52 Fig. 53

Fig. 52.—Chancre of tip of tongue (female).
Fig. 53.—Syphilis. Interstitial glossitis and smooth atrophy.

median surface of the dorsum of the tongue a group of papillomas suggesting the glossite losangique mediane of Brocq and Pautrier was proved by biopsy to be tuberculosis by the demonstration of tubercle bacilli in the tissues removed. For a description, illustration and literature on glossitis rhombica mediana, see article by John Lane.[18] A patient with an extensive tuberculous verrucosa of the hand had a similar lesion on the side of the tongue which yielded rather promptly to electrodesiccation. Tuberculosis of the tongue, when associated with pulmonary tuberculosis, would be given a guarded prognosis. We have cured the local

18. Lane, John E.: Glossitis Rhombica Mediana, Arch. Dermat. & Syph. 9:547 (May) 1924.

lesions with radium and with electrocoagulation, only to have the patients succumb a year or two later with pulmonary tuberculosis. In one instance a tuberculous linear lesion of the tongue was destroyed with electrodesiccation. Two years later several ulcers appeared on the tongue, the entire tongue became enormously swollen and very hard, the deep tissues of the oral cavity and throat were badly involved, and there was advanced, active pulmonary tuberculosis. The patient died a few months later. Figure 33 shows a tuberculous granuloma of the lip without ulceration. We have another case in which the lesion was entirely in the deep tissue—possibly a sarcoid.

Syphilis.—Syphilis and tuberculosis have so many features in common that a diagnosis by observation alone is often impossible. The aid of the laboratory to control clinical impressions is often required. The

Fig. 54

Fig. 55

Fig. 54.—Gumma simulating chancre.
Fig. 55.—Gumma simulating chancre.

presence of miliary tubercles about the periphery of the lesion, together with pain on motion of the parts or contact with irritants, are suggestive of tuberculosis. Mistakes in diagnosis might also occur with some of the rarer types of the infective granulomas, such as leprosy and mycosis fungoides. Lupus vulgaris of the mucous membranes imparts to them a roughened mammillated appearance, and there may be ulceration. It may involve them primarily or by extension from the skin. Lupus vulgaris causes extensive destruction of the soft tissues about the orifices, with contractures from the development of sclerotic tissue. Unlike syphilis, it spares the bones.

Before the introduction of the modern arsenicals, early syphilitic lesions of the lips and mouth were more persistent and preserved for a

longer time their power of transmitting the infection. Complications following local irritation by smoking and from secondary mouth infections were frequent. The clinical forms which are generally referred to as mucous patches are analogous to the early syphilitic eruptions on the skin and show all graduations from circumscribed redness to gray discolorations of the surface epithelium with or without definite infiltrations, erosions or ulcerations (fig. 34 and 35). A limited experience may easily lead the observer to confuse them with the lesions of aphtha (fig. 36 and 37), herpes, dermatitis herpetiformis, erythema multiforme, beginning pemphigus, mercurial and bismuth stomatitis and other circumscribed local affections. One should, therefore, be conservative in making a diagnosis of eroded diphtheroid or ulcerating lesions of the

Fig. 56

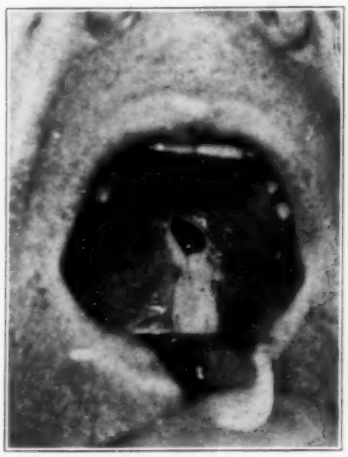

Fig. 57

Fig. 56.—Syphilitic lymphangitis and gumma of lower lip.
Fig. 57.—Ulcerating gumma and perforation of soft palate.

lips, commissures of the mouth and oral cavity from their objective features alone. Perlèche (fig. 38) should not be confused with split or hypertrophic syphilitic papules (figs. 39 to 43 inclusive) or later ulcerating lesions (fig. 44). The demonstration of *Spirochaeta pallida* establishes the diagnosis, but it is not always possible to find the organisms, and at times they may be confused with other spiral organisms in the mouth. In hypertrophic mucous patches of the lips positive results are more easily achieved, both clinically and bacteriologically.

Chancre of the lip is usually easy to recognize, as is chancre of the tongue, if its possible occurrence is kept in mind. On the tonsil the chancre seldom has definite features, and is readily mistaken for other

conditions until the secondary rash appears. One may suspect its presence from regional lymph node enlargement (figs. 45 to 52 inclusive).

In the mouth, as on the skin, syphilis at times produces definite clinical pictures: (1) chronic interstitial glossitis with leukoplakia and smooth atrophy, (2) rapidly developing ulcers from breaking down of granulomas, (3) perforations of the hard and soft palate.

If the outlines are polycyclic and the lesions multiple, the diagnosis is more certain. Rapidity of development and involution of late syphilomas depend chiefly on their anatomic site; on the soft palate, ulceration is rapid. On the tongue, connective tissue reaction keeps

Fig. 58

Fig. 59

Fig. 58.—Ulcerating gumma and perforation of soft palate.

Fig. 59.—Congenital syphilis; "snuffles," mucous patches and rhagades.

pace with the specific granuloma, producing a glossitis with a deep lobulated surface (fig. 53). A similar condition may be found on the lips and inner sides of the cheeks, giving rise to a mammillated surface not unlike lupus vulgaris of the mucous membranes. In one of our cases this type of granuloma infiltrated the mucous membrane of both cheeks, leading to obstruction of Steno's ducts and hyperplasia of both parotids. The sclerogummatous process has been compared to the slow visceral reactions of syphilis. In another patient with interstitial infiltration of both lips and cheeks, causing great pain when food was taken, the condition was unrecognized for two years in spite of the existence of tabes in the mate. The Wassermann reaction was strongly positive.

Fig. 60

Fig. 61

Fig. 60.—Radiating scars at the commissures in a case of congenital syphilis.

Fig. 61.—Congenital syphilis. Saddle nose, radiating scars at commissures and deformed teeth.

Fig. 62

Fig. 63

Fig. 62.—Leukoplakia. No history of syphilis. Wassermann test negative (male).

Fig. 63.—Leukoplakia in a syphilitic; male (Dr. Parounagian's patient).

and treatment was followed by a rapid clinical cure (figs. 54 to 58 inclusive).

The infant with congenital syphilis, in addition to having lesions in the deeper parts of the oral and nasal mucosa, often presents ulcerated and fissured infiltrations in both lips and about the angles of the mouth (fig. 59). On healing, permanent radiating scars remain which are significant of the past activity of the infection (fig. 60). In late hereditary syphilis important information may be obtained from changes in the tongue, perforations of the hard or soft palate or scars on other parts of the mucous membrane. Changes in the teeth are due to nutritional disturbances from intra-uterine infection of the fetus, not to a direct action of the spirochete on the tooth germ (fig. 61). For detailed

Fig. 64

Fig. 65

Fig. 64.—Leukoplakia in a syphilitic (male).
Fig. 65.—Leukoplakia and syphilitic interstitial glossitis (male).

information regarding the dental changes in congenital syphilis, the reader is referred to Zinsser's "Diseases of the Mouth" translated by Stein.

Keratoses.—Keratoses of the oral cavity comprise an important group of epithelial changes generally associated with an inflammatory reaction in the subepithelial tissues. Formerly a number of distinct conditions were included under the general term of leukokeratosis because of their clinical similarity. It is now possible to differentiate from true leukokeratosis, which is a primary mucous membrane change, lichen planus, lupus erythematosus and local circumscribed alterations in the surface epithelium following the involution of syphilitic lesions. The latter may be found on the dorsum or sides of the tongue with a slight depression surrounded by radiating lines and indicate the terminal

rather than the active stage of a pathologic process. We are able to confirm from our experience the generally accepted view that leukoplakia may develop from prolonged irritation independent of syphilis. The usual causes aside from syphilis are excess in smoking and chronic irritation from rough and carious teeth. One of the most extensive cases we have ever seen occurred in a man 35 years old, who had smoked strong cigars for twenty years and who had never contracted syphilis. The keratosis in this man resulted in a rapidly progressive carcinoma of the mucous membrane of the cheek at the site of a leukoplakia which had become verrucous. It is not unusual to see minor grades of this condition in smokers extending backward from the com-

Fig. 66

Fig. 67

Fig. 66.—Syphilis. Smooth atrophy and leukoplakia (male).
Fig. 67.—Syphilitic interstitial glossitis and leukoplakia (male).

missures in the form of patches or radiating lines. It often remains stationary if moderate smoking is continued. It is, however, the duty of the medical adviser under these conditions to discourage this habit and to protect the vulnerable mucosa from irritation and possible danger of malignant change. The association of leukoplakia of the mouth with lichenification of the skin has been studied by the senior author [19] in a former communication. The histologic findings in the two conditions were identical and suggested a common cause for the skin and mucous membrane change in the case studied.

19. Fordyce, John A.: J. Cutan. Dis. **22**:397, 1904.

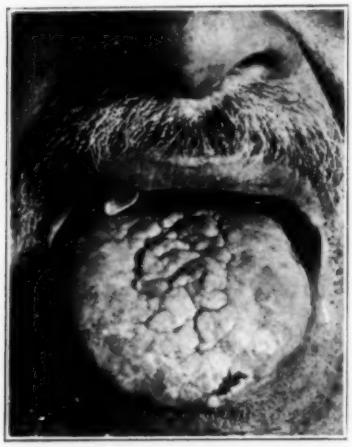

Fig. 68

Fig. 69

Fig. 68.—Syphilitic interstitial glossitis, smooth atrophy, leukoplakia and beginning epithelioma (male).

Fig. 69.—Syphilitic interstitial glossitis, smooth atrophy, leukoplakia and epithelioma (male).

Fig. 70

Fig. 71

Fig. 70.—Verrucous leukoplakia in a syphilitic (male).

Fig. 71.—Verrucous epithelioma (male).

An extensive leukokeratosis involving the lips, tongue, cheeks or even a large part of the oral cavity may exist for years with no indication of malignant degeneration. On the other hand, the most limited and apparently insignificant looking white patch may be rapidly followed by carcinoma. A small lesion of this kind not so large as a split pea situated just within the commissure was destroyed with the galvanocautery. Within a few months a lymph node below the jaw on the opposite side was found to be enlarged. It was removed and found to be the site of a squamous cell epithelioma. A few weeks later the lymph node on the side corresponding to the original lesion was likewise enlarged. An examination after excision showed a cancerous infiltration. The site of the original lesion remained healed. Death followed

Fig. 72

Fig. 73

Fig. 72.—Epithelioma (male).
Fig. 73.—Basal cell epithelioma.

a general dissemination of the new growth. A like sequence was observed after the treatment of a small patch of leukokeratosis on the side of the tongue with radium. In both cases the original lesions, although showing no clinical induration, had definite carcinomatous structures under the microscope. In one instance a small patch of eroded leukoplakia was cured with radium. Two years later, fatal epithelioma developed in the cervical lymphatics.

Leukoplakia.—The factors concerned in the usual types of leukoplakia are syphilis plus irritation. The latter is chiefly from excessive smoking, but may be due, in case the lateral border of the tongue is involved to misplaced, rough or carious teeth. When the dorsum of the tongue is covered with a thick layer of keratotic epithelium, it is not

always possible to say from simple observation whether we have to do with a syphilitic or a nonsyphilitic condition. In the case shown in figure 62, the Wassermann reaction was negative, and no history of syphilis could be elicited. In other patients (figs. 63, 64 and 65), the serum reaction was positive. Areas in which the thickened epithelium has exfoliated often show a superficial glossitis suggesting a syphilitic origin. The association of sclerosis of the deeper structure of the tongue with leukoplakia always signifies its syphilitic nature, and the great majority of such cases have strongly positive Wassermann reactions which yield slowly to treatment.

Smooth atrophy of the tongue may be found with leukoplakia, together with a superficial glossitis as in figs. 66 and 67. In these cases a diagnosis of syphilis was immediately made and confirmed by a strongly positive serum reaction. A typical and well marked case of

Fig. 74

Fig. 75

Fig. 74.—Epithelioma (female).
Fig. 75.—Preepitheliomatous keratosis of mucous surface of lip (male).

deep sclerosing glossitis with well defined surface change in the epithelial covering is illustrated in figure 68. Near the tip of the tongue, a superficial ulcer with surrounding induration marks the beginning of a carcinoma. This patient also had neurosyphilis and subsequently died of rapidly spreading cancer. The tongue depicted in figure 69 shows a syphilitic glossitis, leukoplakia and beginning carcinoma. This patient also had syphilis of the central nervous system.

Darier [20] has called attention to the occurrence of leukoplasic ulcers on surfaces at the site of long continued leukoplakia. In his opinion this type of ulceration is due to local alteration in the nutrition of the parts from sclerosis and arteritis. It is never followed by malignant change.

20. Darier, J.: Précis de dermatologie, Masson et Cie., 1923, p. 362.

Mercury intramuscularly combined with arsphenamine intravenously, in Darier's experience, favorably influences leukoplastic ulceration. Its response to treatment of this kind intimately connects the ulceration with the underlying syphilitic sclerosis. It is important to keep in mind that the most frequent cause of leukoplakia is syphilis, and that the condition on the surface cannot be favorably influenced by local treatment while the deeper lesions remain active. The persistent positive serum reaction in these cases indicates that we have to do with a tissue reaction due to the presence of spirochetes. Prolonged treatment favorably influences the underlying sclerosis and also the surface keratosis. Relapses occur when the treatment is discontinued before the Wassermann reaction becomes negative. The amount of treatment required for interstitial glossitis with or without surface keratosis is comparable to that required in types of visceral syphilis like interstitial hepatitis. The fibrosis which follows

Fig. 76

Fig. 77

Fig. 76.—Squamous cell epithelioma of lower lip in a woman (Dr. Wise's patient).

Fig. 77.—Squamous cell epithelioma (female).

the focal lesions renders the organisms difficult to reach by the specific drugs. After prolonged treatment, the Wassermann reaction may remain strongly positive, become modified or negative. Even when the reaction becomes negative, too much confidence must not be felt by the physician that it will continue so. These observations should cause the practitioner to keep such cases under supervision for an indefinite period. He should also have a definite conception of the types due to an underlying syphilitic inflammation which require prolonged treatment and those which are chiefly caused by prolonged irritation.

Cases of leukoplakia which result in carcinoma have been variously estimated from 20 to 50 per cent. If the minor and severe cases are grouped together, the former figure is perhaps more nearly correct. One should always have in mind this possibility and be watchful for the development of a localized patch of induration or a papilloma. A warty

growth on a patch of leukokeratosis or a generalized verrucous change (fig. 70) should at once arouse suspicion of malignancy. A carcinoma of the lateral border and anterior surface of the dorsum of the tongue with marked verrucous outgrowth is shown in figure 71. In this case, which had existed for one year before observation, the primary etiologic factor was an irritation produced by a ragged tooth. A history of syphilis was not elicited, and the blood reaction was negative.

Carcinoma.—A carcinomatous nodule may develop below the surface of the tongue at the site of a fissure, or it may follow a breaking down gumma. In the latter case, it may be difficult to differentiate the two conditions. Carcinoma of the lip as a sequence to syphilis is much less

Fig. 78

Fig. 79

Fig. 78.—Squamous cell epithelioma (female).
Fig. 79.—Scrotal tongue (male).

frequent than in the tongue and mouth. We have noted, however, malignant change following syphilitic lesions at this site. A carcinoma involving two thirds of the anterior half of the tongue is shown in the illustration (fig. 72), with marked lymph node enlargement. It began as an indurated fissure on a leukoplakia. The history of syphilis in this patient was indefinite, and the Wassermann reaction was negative. The influence of smoking cigars in the development of cancer of the mouth is emphasized in the much larger percentage of cases in men. Darier states that its incidence in men is ten times greater than in women. Glossitis and leukoplakia are, however, occasionally seen in women in acquired and congenital syphilis but are less often followed by carcinoma. On the lips, at the mucocutaneous juncture, basocellular epithelioma

(fig. 73) may rarely develop primarily; they are most often extensions from the adjacent skin. A spinocellular carcinoma on the under surface of the tongue of a woman is illustrated in fig. 74.

Histologically, the vast majority of cancers of the lip and oral cavity are of the spinocellular or squamous cell type. Their rapid development and invasive power is due to their anatomic site, that is, the abundant supply of lymph and blood vessels. For this reason, as recently pointed out by MacCormac, a sharp distinction should be made between squamous cell carcinoma of the mucous membranes and the same type of growth on the skin. In the latter, invasion of the lymph nodes is less constant and much slower than in the former (figs. 75 to 78, inclusive).

Fig. 80

Fig. 81

Fig. 80.—Scrotal tongue; perlèche (female).

Fig. 81.—Mycosis fungoides.

Epithelioma.—We have examined histologically two cases of basocellular epithelioma of the mucous membrane over the hard palate, which clinically were diagnosed lupus vulgaris. The lesions had existed for an indefinite period without lymph node involvement and were cured by curettage and the galvanocautery. We cannot unreservedly agree with MacCormac's contention that the histologic structure of the two well-known types of epithelioma is chiefly due to their rapidity of growth.

Glossitis.—In touching again the question of diagnosing types of glossitis, the occurrence of scrotal tongue (lingua plicata) should be known and its possibility kept in mind. This congenital and permanent condition of the tongue, although bearing some resemblance to interstitial glossitis, shows no change in consistence. The folds of the mucous membrane, separated by more or less deep fissures, are soft and show

no keratosis of the epithelium. The tongue is painless, and there is no inflammatory reaction. Patients are often ignorant of its existence. The condition is portrayed in figure 79, which was a case of moderate development, and in figure 80 which shows the presence of deeper fissures between the folds which have a cerebriform conformation.

Among the rarer affections which result in sclerosing types of glossitis, mention has already been made of Leloir's observation regarding the reaction of the organ to large lupus nodules. Leprosy also involves the tongue and causes a glossitis which could be confused only with syphilitic glossitis when both infections are present. We have a single observation of mycosis fungoides of the tongue (fig. 81). In this case, which occurred with widely disseminated skin lesions, the tumor mass was separated into lobules by fissures giving somewhat the appearance of a syphilitic glossitis. A mistake in diagnosis could be made only by observing the tongue alone and neglecting the cutaneous lesions.

Leukokeratosis.—The histologic structure of leukokeratosis shows in well marked cases an enormous hyperplasia of the superficial epithelium and its change into keratinized cells like those in the skin. Beneath the thickened horny layer keratohyalin and eleidin granules are abundant. In normal mucous membranes these granules are absent. An acanthosis is present with downgrowths of the interpapillary rete. The cellular infiltration in the papillary body consists chiefly of round cells which become more dense and abundant as the epithelial processes show a more active growth. The use of caustics or any inadequate treatment may stimulate this vulnerable epithelial tissue and hasten the development of carcinoma. When syphilitic glossitis is associated with leukoplakia, the histologic changes in the deeper tissues are more pronounced. There is an active inflammatory reaction, together with sclerosis, which is favorably influenced by specific treatment. A greatly hypertrophied and fissured tongue may be reduced to normal size, and at the same time the keratosis so far modified that it ceases to be a menace. Smooth atrophy with retracted scars remain, and indicate a former active condition. Treatment in these cases, as indicated in a foregoing paragraph, should be continued until the Wassermann reaction is permanently reversed. Leukokeratosis, independent of syphilis or after thorough treatment of the specific cases, may be greatly improved or cured by the adequate employment of electrodesiccation, the galvanocautery or radium and proper attention to mouth hygiene.

NOTE.—This paper, written with his associate, Dr. MacKee, was read by Dr. Fordyce at the meeting of the American Dermatological Association at Washington in May, 1925. That was his last appearance before us, as this is his last contribution to medical literature.

The paper and the illustrations represent the observations of a lifetime. It is characteristic of Fordyce—acute, comprehensive, scholarly, quiet. One of the tragedies of life is that the accumulated experience of such men passes with them.—EDITOR.

SUPERFICIAL YEAST INFECTIONS OF THE SKIN AND OF ITS APPENDAGES *

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CHICAGO

The increasing number of cases of yeast infections of the skin would seem to justify a concise review of the literature supplemented by the study of a case of interdigital yeast infection.

CLASSIFICATION

In view of our incomplete knowledge of yeasts, a classification which is unassailable is probably difficult to formulate. The one suggested by Castellani and Chalmers [1] is alluring because of its brevity and simplicity. It divides the yeasts into five groups: (1) *Saccharomyces:* In cultures budding forms are present; mycelium is absent or present only in traces; asci are present. (2) *Cryptococcus:* The same is true for this as for *Saccharomyces,* but no asci are present. (3) *Endomyces:* Budding forms are present, with mycelium well developed, septate or not, branched or not; asci are present. (4) *Monilia:* The same is true for this group as for *Endomyces,* but no asci are present. (5) *Oidium:* Budding forms are absent; mycelium is well developed, oval or rectangular; arthrospores (thallospores?) are present.

REVIEW OF FOREIGN LITERATURE

Rivolta,[2] in 1873, apparently first found yeast cells in skin lesions. His patient had psoriasis. Rivolta found budding cells in the scales and called them "Cryptococci of psoriasis." Malassez,[3] Bizzozero,[4] Caesar

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1. Castellani and Chalmers, quoted by Greenbaum and Klauder: Yeast Infections of the Skin, Arch. Dermat. & Syph. **6**:675, 1922.

2. Rivolta: Die parassiti vegetali, ed. 2, Torino, Loescher, 1884, p. 409.

3. Malassez: Note sur le champignon du pityriasis simple, École prat. de. hautes études, Lab. d'histol. du Coll. de France, Trav., Paris **1** and **2**:170-183, 1874-1875.

4. Bizzozero: Ueber die Mikrophyten der normalen Oberhaut des Menschens, Virchow's Arch. f. path. anat. **8**:441-459, 1884.

Boeck,[5] Oudemans and Pekelharing,[6] Gamberini [7] and van Hoorn [8] have all found budding yeast cells in the scales of pityriasis capitis. Malassez believed that they were a factor in the production of baldness due to that disorder.

While studying the normal dermatologic flora, Tommasoli [9] discovered several yeasts, and suggested that they might possess pathogenic properties.

Buist [10] is said to have grown a yeast from the lesions of variola and vaccinia.

Buschke [11] found yeasts in the scales from five of six cases of seborrheic eczema. Microscopically, there was no evidence that they were causative factors. He divided the yeasts into three classes: (1) those which exist on the body surface as saprophytes but which may become pathogenic; (2) those which grow in the upper layers of the epidermis and there lead partly to catarrh and partly to erosions and even to shallow ulcers; (3) those which penetrate into the interior of the organism and produce symptoms of disease.

Kraepelin,[12] Jacobi [13] and Kumer [14] have described peculiar ringworm-like lesions in psychiatric patients subjected to the permanent water-bath. This condition was originally believed to be a trichophyton infection; it is now considered to be due to yeasts.

Marzinowski and Bogrow [15] found yeast cells in thirty-seven of eighty-four persons examined. They were observed most often about the hair roots, in acne lesions and especially in comedones. Yeast cells were found in acne only previous to suppuration.

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5. Boeck, Caesar, quoted by Rasch: Acta dermat. ven. **4**:12, 1923.

6. Oudemans and Pekelharing, quoted by Ricketts: J. M. Res. **1**:377, 1901.

7. Gamberini, quoted by Rasch, Footnote 5.

8. Van Hoorn: Ueber Mikroorganismen bei Seborrhea, Monatsh. f. prakt. Dermat. **20**:545-549, 1895.

9. Tommasoli: Flora dermatologica; Bacillen, Kokken und Hefeformen, Monatsh. f. prakt. Dermat. **9**:49-61, 1889.

10. Buist, quoted by Ricketts, Footnote 6.

11. Buschke: Ueber Hefenmykosen bei Menschen und Thieren, Samml. klin. Vortr. N. S. **51-89**:1081-1100, 1897-1900.

12. Kraepelin: Die Heidelberger Wachabteilung für unruhige Kranke, Centralbl. f. neurol. u. psychiat. N. S. **24**:711, 1901.

13. Jacobi: Eine besondere Form der Trichophytie als Folgeerscheinung des permanenten Bades, Arch. f. Dermat. u. Syph., Orig. **84**:289-300, 1907.

14. Kumer: Ueber die Wasserbettmykose, Arch. f. Dermat. u. Syph., Orig. **135-136**:12-21, 1921.

15. Marzinowski and Bogrow: Die Blastomyceten und ihre Beziehung zu Hautkrankheiten, Arch. f. Dermat. u. Syph., Orig. **86**:215-237, 1907.

Ungual and periungual lesions have been recorded by Dübendorfer,[16] Selenew,[17] Forbes,[18] Pellier,[19] Bourgeois,[20] Kumer,[21] Frei,[22] Guggenheim,[23] Lombardo,[24] Jaubert and Goy,[25] and Hicks and Chopping.[26] Frei's patient exhibited a suppurative onychia following a generalized postarsphenamin dermatitis. Lombardo's patients presented lesions of the mouth and skin. Jaubert and Goy's patient was cured by a yeast-containing autovaccine after the failure of various antiseptics. Ehrmann [27] found yeast cells in eczematous lesions, with glycosuria, on the hands of a worker in a yeast factory. Ciarocchi [28] first described a singular dermatosis limited to the webs between the middle and ring fingers of both hands.

Gougerot and Gancéa,[29] Hudelo and Montlaur,[30] Kaufmann-Wolf,[31]

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16. Dübendorfer: Ein Fall von Onychomycosis blastomycetica, Dermat. Centralbl. **7**:290-302, 1904.

17. Selenew: Onychia blastomycetica, Ikonograph. Dermat. 1908, Pt. 3, pp. 115-118.

18. Forbes: A Case of Mycosis of the Tongue and Nails in a 3½ Year Old Female Child, Proc. Roy. Soc. Med., Dermat. Sect., June 17, 1909; Brit. J. Dermat. **21**:221-223, 1909.

19. Pellier: Sur une nouvelle forme parasitaire des onychomycoses, Ann. de dermat. et syph. **5**:563-565, 1912.

20. Bourgeois: Ueber onychomycosis saccharomycetica, Dermat. Ztschr. **22**: 411-420, 1915.

21. Kumer: Wien. dermat. Gesellsch., Dec. 4, 1919; Dermat. Wchnschr. **70**: 109, 1920.

22. Frei: Eine Soormykose der Nägel bei einer Salvarsan dermatitis, Arch. f. Dermat. u. Syph., Orig. **129**:404-433, 1921.

23. Guggenheim: Ueber Onychomykosis oidiomycetica, Arch. f. Dermat. u. Syph., Orig. **142**:305, 1923.

24. Lombardo, C.: Per la conoscenza della endomicosi cutanea, Gior. ital. d. mal. ven. **62**:243-265, 1921; Nuove osservazioni de endomicosi cutanea, ibid. **64**:563-573, 1923.

25. Jaubert and Goy: Affection à levures, traitée et guérie par la vaccinothérapie, Compt. rend. Soc. de biol. **89**:460-461, 1923.

26. Hicks and Chopping: A Case of Paronychia Due to a Blastomycetes, Lancet **1**:128, 1924.

27. Ehrmann: Ueber diabetische und arthritische Dermatosen, Wien. med. Presse **42**:563, 1901.

28. Ciarocchi: Su di una non descritta dermatosi simmetrica, propria del terzo spazio interdigitale (spazio medio-annulare) delle mani, Gior. ital. d. mal. ven. **43**:239-265, 1908.

29. Gougerot and Gancéa: Epidermomycose due à un parasite levuriforme, Bull. Soc. franç. de dermat. et syph. **25**:335-339, 1914.

30. Hudelo and Montlaur: Epidermomycose eczématoide par parasites du genre des levures, Bull. Soc. franç. de dermat. et syph. **25**:403-406, 1914.

31. Kaufmann-Wolf: Zur Klassifizierung einiger Dermatomykosen, Dermat. Ztschr. **22**:441-463, 1915.

Fabry,[32] Berendsen,[33] Stickel,[34] Hoffmann,[35] Kumer,[36] Hudelo, Sartory and Montlaur,[37] Bloch,[38] Burnier and Langeron,[39] Lombardo[40] and Alexander[41] have also contributed to the subject of interdigital yeast infections. Gougerot and Gancéa first studied them from the bacteriologic standpoint. They found filaments, pseudofilaments, budding yeast cells and chlamydospores. Their cultures were white, creamy, shiny and smooth. Hudelo and Montlaur also found involvement of the intergluteal fold, the anal and inguinal regions. A whitish cream-colored epidermis was always present, and pure yeast cultures were invariably obtained.

The cases observed by Kaufmann-Wolf, Fabry, Berendsen, Kumer and Stickel coincided clinically and also tallied with Ciarrochi's description. The third interspaces of both hands usually were involved in middle-aged women. The original lesions are vesicles which soon rupture, producing the characteristic erosion. This is dark red, glistening, somewhat moist and surrounded by a collaret of whitish macerated skin. Such a lesion rarely exceeds a quarter dollar in size. Its center is formed by the interdigital fold, and it is seen best from the dorsal aspect. Chronicity, intense itching and a lack of response to salves are other important characteristics of this type of infection. Kaufmann-Wolf reported about thirty such cases. Microscopically, she found a network of long fine mycelial threads and round or oval, mulberry-like refractile bodies, identical with yeast cells. The cultures were indistinguishable

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32. Fabry: Ueber Erosio interdigitalis blastomycetica, München. med. Wchnschr. **64**:1557-1158, 1917; Weitere Mitteilungen ueber Erosio interdigitalis blastomycetica, Dermat. Wchnschr. **66**:321-323, 1918.

33. Berendsen, Ida: Weitere Mitteilungen ueber Erosio interdigitalis blastomycetica, Arch. f. Dermat. u. Syph., Orig. **126**:753-763, 1919.

34. Stickel: Zur Frage der Erosio interdigialis blastomycetica, Dermat. Wchnschr. **72**:257-264, 1921.

35. Hoffmann, E.: Hartnäckige Pilzerkrankung der Interdigitalräume (interdigitale Dermatomykose) mit familiärer Uebertragung, Deutsch. med. Wchnschr. **42**:1579-1580, 1916.

36. Kumer: Die Soormykose der Haut, Arch. f. Dermat. u. Syph., Orig. **140**: 105-137, 1922.

37. Hudelo, Sartory and Montlaur: Epidermomycoses eczématoides dues à un parasite du genre Saccharomyces, Bull. de l'Acad. de méd., Paris **80**:360-362, 1918.

38. Bloch, B.: Oidiomykose der Haut bei Diabetes, Cor.-Bl. f. schweiz. Aerzte **46**:273-274, 1916.

39. Burnier and Langeron: Epidermite dyshidrosiforme des pieds due à une levure, Tr. 1 *er* congrès de dermat. et syph. de langue Française, Paris, 1922, p. 401.

40. Lombardo, C.: Dermite endomycetica interdigitale, Gior. ital. d. mal. ven. **63**:674-683, 1922.

41. Alexander: Beiträge zur Klinik und Diagnose der Soorerkrankungen der Haut, Dermat. Wchnschr. **75**:125-131, 1921.

from thrush (Soor). Fabry, Berendsen and Stickel have recorded a considerable number of these cases under the title of "Erosio interdigitalis blastomycetica." In scrapings they found only yeast cells. Berendsen reproduced the disorder in one case. Hoffman's three cases in one family show that this disorder is capable of transmission. Kumer saw about one hundred such cases during three years. He found mycelium and clumps of spores and obtained cultures like those of thrush.

Petges [42] first observed examples of "mycotic eczema" in 1911, particularly in diabetic persons. The genitals were frequently affected and sometimes the interdigital spaces. Scrapings showed filaments and spores. For direct examination Petges recommends the removal of a thin tangential slice of skin, using the blade of a Gillette safety razor. He summarized the epidermomycoses in 1922.[43] Bruno Bloch has reported a case of oidiomycosis affecting the genitals in a diabetic patient. A typical Soor culture was obtained. Staheli [44] has reported three cases of pustular eruption due to yeasts. Plaut [45] has published an instance of kerion-like yeast involvement of the scalp.

Favre [46] has observed a recurrent case of yeast infection with purulent lesions about the bases of the hairs over both thighs, anteriorly, as well as on the perineum and in the intergluteal fold. Many ovoid spores and nonsegmented filaments were found in scrapings. Muijs,[47] Beck,[48] Ibrahim [49] and Alexander have described cases of perigenital involvement. Beck's and Ibrahim's patients were infants. The lesions were reddish, scaling and well defined. Castellani and Chalmers,[50]

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42. Petges: L'eczéma mycosique, Bull. Soc. franç. de dermat. et syph. **28**: 185-192, 1921.

43. Petges: Rapport sur les epidermomycoses, Tr. 1 *er* congrès de dermatol. et syphiligraph. de langue Française, Paris, 1922, pp. 13-31.

44. Staheli: Drei Fälle von Hautentzündung verursacht durch Oidien (Dermatitis pustulosa oidiomycetica), Arch. f. Dermat. u. Syph., Orig. **134**:407-417, 1921.

45. Plaut: Beitrag zur Kenntnis der Mikroorganismen der Kopfhaut, Arch. f. Dermat. u. Syph., Orig. **131**:378-383, 1921.

46. Favre: Sur une forme vésico-pustuleuse de l'intertrigo mycosique de Dubreuilh, Tr. 1 *er* congrès de dermatol. et syphiligraph. de langue Française, Paris, 1922, pp. 31-35.

47. Muijs: Endomyces albicans als Ursache einer Epidermomycosis inguinalis, Dermat. Wchnschr. **66**:65-71, 1918.

48. Beck: Ueber das Erythema mycoticum infantile, Dermat. Stud. **20**:494-505, 1910.

49. Ibrahim: Ueber eine Soormykose der Haut im frühen Säuglingsalter, Arch. f. Kinderh. **55-56**:91-101, 1910-1911.

50. Castellani and Chalmers: Manual of Tropical Med., London, Bailliere, Tindall and Cox, Ed. 2, 1913, p. 1512.

Dubreuilh and Joulia [51] and Whitfield [52] have reported examples of intertriginous lesions due to yeasts. Hohlfeld,[53] Castellani and Chalmers and Rajka [54] have described cases with scaling patches on the trunk in which yeasts were found. In Hohlfeld's patient, a child, the mouth showed a thrush infection. Miescher [55] has recorded a case of scleroderma complicated by a weeping dermatitis, which later became pustular, owing to a yeast. He also has seen a case of cutaneous yeast infection simulating miliaria rubra.[56] Hudelo, Sartory and Montlaur,[57] Engelhardt [58] and Kumer [59] have reported yeast infections limited to the axillary region.

Rasch [60] has reported fifteen cases of cutaneous yeast infection, all of them originally diagnosed as eczema ani, prurigo ani, prurigo scroti or prurigo vulvae. The majority had received repeated series of roentgen-ray treatments. One patient had received enough roentgen-ray treatment to produce a large epithelioma, but with no effect on the yeast lesions. Rasch stresses the irregularly curved geographic border with its detached white fringe of epidermis which he believes differentiates this condition from ringworm and epidermophytosis. He found mycelial threads and groups of yeast cells in scrapings. He favors calling these organisms yeasts instead of attempting to class them with thrush (Soor). He had not seen an interdigital case. For treatment he reports good results with a chrysarobin or anthrarobin ointment, sometimes combined with sulphur.

Dubois [61] has studied a considerable number of yeast infections in Hudelo's service. The border is usually geographic with a loosened

51. Dubreuilh and Joulia: De l'intertrigo mycosique. Forme nouvelle d'epidermophytie due à une levure, Ann. de dermat. et syph. **3**:145-162, 1922.

52. Whitfield: Proc. Roy. Soc. Med., London, July, 1908; Brit. J. Dermat. **20**:274, 1908.

53. Hohlfeld: Soormykose der Haut, Deutsch. med. Wchnschr. **40**:1799, 1914.

54. Rajka: Soormykose der Haut, Dermat. Wchnschr. **74**:561-563, 1922.

55. Miescher: Congress Swiss Dermat. Soc., 1920; Schweiz. med. Wchnschr. **51**:139, 1921.

56. Miescher: Ein unter dem Bild einer Miliaria rubra verlaufener Fall von ausgedehnter Oidiomykose (Miliaria rubra oidiomycetica), Dermat. Wchnschr. **73**:1265-1269, 1921.

57. Hudelo, Sartory and Montlaur: Epidermomycose eczématide due à un parasite du genre Endomyces, Compt. rend. Acad. de sc. **170**:1086, 1920.

58. Engelhardt: Ein Beitrag zur Aetiologie oberflächlichen Hautblastomykosen und Haut Soormykosen, Arch. f. Dermat. u. Syph., Orig. **146**:313-322, 1924.

59. Kumer: Ein Beitrag zur Lokalisation der Soormykose in der Axilla, Arch. f. Dermat. u. Syph., Orig. **148**:399-401, 1925.

60. Rasch: Eczema Marginatum Hebra and Other Mycoses Resembling Eczema, Acta dermat. ven. **4**:12-40, 1923.

61. Dubois: Les epidermites à levures, Thèse de Paris, 1923.

epidermis. He emphasizes the importance of cultures since a direct examination is often negative. For the patient who seldom sees the physician he recommends the following: copper sulphate 2 gm., distilled water 40 gm., which are mixed and dissolved. Twenty grams of petrolatum and 40 gm. of hydrous wool fat are added. This should be rubbed in daily. In cases in which the physician is frequently consulted, Dubois speaks highly of a 10 per cent. chrysarobin suspension in traumaticin.

Touraine-Desvaux [62] has written a thesis on yeast infections, observed in Jeanselme's service. He lays stress on the sharp margin, varnished appearance, creamy coating, maceration, early scaling of the border and the presence of satellite lesions as being of diagnostic value.

REVEW OF AMERICAN LITERATURE

Schamberg [63] has reported a fatal case of thrush infection in an infant aged 6 months. Extensive skin and oral lesions were present. *Oidium albicans* was found in these as well as on the mother's nipples and in the baby's stools. Ormsby and Mitchell,[64] in a comprehensive study of ringworm of the hands and feet, in three cases found an organism which corresponded with that found by Gougerot and Gancéa. In three other patients the cultures resembled those of Kaufmann-Wolf. Tanner and Feuer [65] have studied a patient with recurrent miliary abscesses of the left index finger. Cultures resembled ordinary yeasts, with round or ovoid cells and a marked tendency to mycelial formation. This organism was slightly pathogenic to guinea-pigs.

Mitchell,[66] in 1922, first described in American literature cases of the interdigital variety. His three cases were like those of Fabry. All of them occurred in housewives. Double contoured spores and mycelial threads were present. Cultures on Sabouraud's medium were creamy, white and shiny. Greenbaum and Klauder [67] have recorded seven examples of interdigital yeast infection. In one case a cryptococcus was recovered which proved pathogenic to guinea-pigs, causing a subcu-

62. Touraine-Desvaux: Contribution a l'étude des epidermomycoses à levures et à champignons levuriformes, Thèse de Paris, 1923.

63. Schamberg: Memorandum on Cutaneous Thrush, Arch. Pediat. **32**:617-620, 1915.

64. Ormsby and Mitchell: Ringworm of the Hands and Feet, J. A. M. A. **67**:711-716 (Sept.) 1916.

65. Tanner and Feuer: Culture Studies on an Infection of the Skin by Endomyces Albicans, Arch. Dermat. & Syph. **1**:365 (April) 1920.

66. Mitchell: Erosio interdigitalis blastomycetica, Arch. Dermat. & Syph. **6**: 675-679 (Dec.) 1922.

67. Greenbaum and Klauder: Yeast Infections of the Skin, Arch. Dermat. & Syph. **5**:332-344 (March) 1922.

taneous abscess from which yeast cells were readily recovered. Greenbaum and Klauder reproduced the disorder in one case. They believe that the differential diagnosis between ringworm, intertrigo saccharomycetica and other conditions can be made only through laboratory methods.

Engman [68] has described lesions resembling epidermophyton inguinale under the breast, about the genitals and on the thighs of a negress. A thrushlike organism was present in scrapings. Odland,[69] Lieberthal,[70] Sweitzer [71] and Beeson [72] have shown cases of interdigital yeast infection. Kingery and Thienes [73] have called attention to cases of associated paronychia and dermatitis due to yeastlike organisms. Their cases occurred among fruit canners, about one-third of those so employed being attacked.

REPORT OF A CASE

F. S., colored, aged 32, a washerwoman, was seen at Mercy Clinic on Nov. 23, 1923, because of "sores" between her fingers which had been present for about five years. Stopping work for some months had not caused them to heal. She also complained of a tormenting pruritus.

Examination revealed no other skin lesions or involvement of the visible mucous membranes. The disorder was confined to the webs between the third and fourth fingers of both hands. In each case a dime-sized area was affected, being limited to the dorsal surface. Each lesion consisted of a shallow central erosion surrounded by a narrow and somewhat irregular collar of macerated epidermis. The floor of the erosion was bright red, slightly moist and had a varnished appearance. The collar was undermined and readily elevated without causing any pain (Fig. 1).

A microscopic examination of scrapings from the floor of the lesion as well as the deepest portion of the undermined collar showed many refractile mulberry-like bodies identical with yeast cells, but no mycelium. These findings as well as the clinical picture agree with the findings of Fabry and his pupils.

EXPERIMENTAL WORK

Method of Obtaining Cultures.—Small bits of tissue were scraped from the deeper portions of the human lesions and placed on the surface of Sabouraud's agar, and similar bits of tissue were dropped into flasks containing Sabouraud's fluid medium.

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68. Engman: Peculiar Fungus Infection of the Skin (Soorpilze), Arch. Dermat. & Syph. **1**:370 (April) 1920.

69. Odland: Minn. Dermat. Soc., Oct. 3, 1923; Arch. Dermat. & Syph. **9**:134, 1923.

70. Lieberthal: Chicago Dermat. Soc., January, 1925; Arch. Dermat. & Syph. **12**:429 (Sept.) 1925.

71. Sweitzer: Minnesota Dermat. Soc., Dec. 3, 1924; Arch. Dermat. & Syph. **12**:113 (July) 1925.

72. Beeson: Chicago Dermat. Soc., Dec. 19, 1923, Arch. Dermat. & Syph. **9**:663, 1924.

73. Kingery, L. B., and Thienes, C. H.: Mycotic Paronychia and Dermatitis, Arch. Dermat. & Syph. **11**:186-202 (Feb.) 1925.

Cultural Studies.—Sabouraud's Agar: Growth on this medium was studied on slant, plate, flask and stab cultures, and was characteristic of the yeast type of micro-organism. On surface plants at the end of twenty-four hours, small, discrete, white, opaque glistening colonies were noted in the cultures lightly seeded, which gradually increased in size until at the end of ninety-six hours they attained a size of about 3 mm.; they showed slightly raised central portions and a marked tendency to become confluent with adjacent colonies. By the end of a week ordinary slant cultures were almost completely overgrown with a thick, creamy, pasty tenacious sheet of organisms, while flask cultures exhibited a single confluent surface growth 2 cm. or more in diameter. Several weeks were required for the complete overgrowth of flask cultures. Old cultures became slightly brownish. Stab cultures displayed prodigious surface growth at the point of inoculation, with moderate growth at the extreme upper portion of the stab. There was no evidence of anaerobic growth in the deeper portion of the stab. Gas was not formed by fermentation of the maltose content of the medium.

Fig. 1.—Lesions in a case of interdigital yeast infection.

Plain Agar: Cultures on both beef infusion agar and on Liebig's meat extract agar were studied. Growth was not quite as rapid nor as luxuriant, otherwise no difference was noted.

Sabouraud's Bouillon: On this medium growth is moderately rapid; at the end of forty-eight hours distinct sedimentation is noted, the supernatant fluid being clear. Delicate pellicle formation at the edge of the flask or tube was seen on cultures several weeks old.

Plain Bouillon: Meat infusion and beef extract bouillon are suitable for cultivation of this organism. The same character of growth was found as described for Sabouraud's bouillon.

Gelatin Mediums: Tests for gelatin liquefaction were carried out on meat infusion gelatin and on Sabouraud's bouillon to which gelatin had been added. Surface growth with moderate development at the upper portion of the stab was noted, such growth being more marked on the second medium mentioned. No liquefaction occurred.

Milk Mediums: Growth was only moderate on litmus and brom-cresol-purple milk. The milk was not coagulated, and the reaction was unchanged.

Indol production was negative.

Blood Agar Plates: Growth was decidedly slow compared to that on Sabouraud's medium. No hemolysis nor pigment formation was observed.

Fermentation Reactions: For fermentation tests sugar-free meat extract bouillon was employed. Maltose and dextrose were fermented, with the production of acid but no gas. Arabinose, xylose, lactose, saccharose, raffinose, inulin, salicin, dulcite, mannite and sorbite were not fermented. We observed that after several transplants on dextrose a considerable quantity of gas was produced.

MORPHOLOGY

The great majority of cells were spherical, ranging in size from 3 to 30 microns in diameter. Typical budding was noted, with an occasional oval shaped cell (Fig. 2). The cells were stained rapidly with anilin dyes, and it was only with very weak solutions that overstaining could be avoided. The Gram stain was retained by these cells. Differential capsule staining was

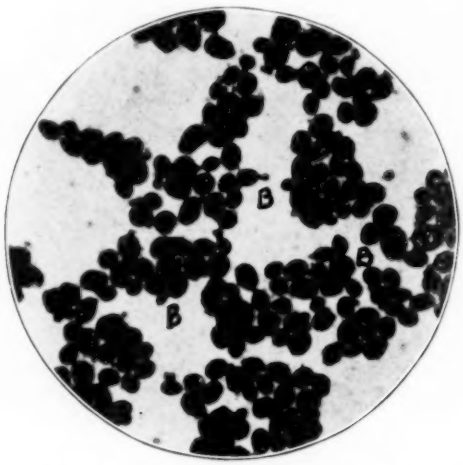

Fig. 2.—Fixed film from growth on Sabouraud's agar stained with gentian violet. At *B* budding cells are seen. Oil immersion objective.

unsuccessful in our hands. When fixed and stained in the ordinary manner, Sahli's borate blue solution was better adapted for study of the inner structure of the cell (Fig. 3). For the detailed study of the inner structure of the individual cell, the unstained wet mount obtained by placing an emulsion of the growth from Sabouraud's solid medium on a slide and pressing a cover-slip solidly down is preferable to ordinary fixation methods. We have found the most satisfactory preparation to be an emulsion of a portion of the growth from solid medium in a drop of weak methylene blue solution (saturated aqueous solution of methylene blue, one or two drops, distilled water 5 c.c.). A cover-slip is then put in place, and drying is prevented by a ring of balsam around the edge of the slip. Neutral red or other vital stains may be employed. The advantage of such a preparation over ordinary fixed films is that overstaining is avoided, and budding or other vital phenomena may be observed.

In both unstained preparations and in the mounts described above it was ascertained that there were three distinct types of cells: (*a*) highly refractile, (*b*) finely or coarsely granular with a hyaline capsule and (*c*) finely or coarsely granular with a hyaline capsule possessing one or more oval or circular highly refractile bodies. The first type of cell appears as a highly refractile, spherical body possessing no granules or other demonstrable structures, and without a capsule. The second type of cell is distinctly in the minority in all cultures, independent of age or character of medium. This form presents the appearance of a spherical cell of variable size possessing a distinctly hyaline capsule, the protoplasm being composed of large or small nonmotile, diffusely scattered granules (Fig. 3). In the stained specimen these granules are basophilic, and in some instances they are collected to one side of the

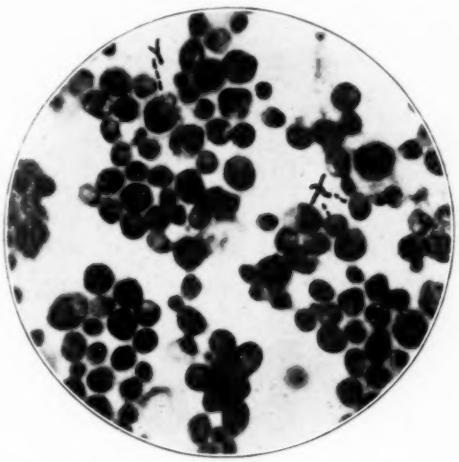

Fig. 3.—Fixed film from growth on Sabouraud's agar stained with Sahlis' borate blue solution. The cells at *X* contain motile bodies; the cell at *Y* exhibits a hyaline capsule.

cell. The third kind of cell is present in great numbers in practically every specimen studied, especially in young actively growing cultures. It appears as a spherical, sometimes oval, body of variable size, possessing a hyaline capsule and finely granular protoplasm of the nature described under the second type referred to above. In such protoplasm, and definitely separated from the hyaline capsule, are one or more highly refractile bodies, which are usually eccentrically placed. These bodies seem to be fluid in nature, with a definite limiting membrane. A small coccus-like particle which is actively motile is often seen within these refractile bodies (Fig. 3). Often there is more than one such motile body to the cell, in one cell as many as seven were counted, one much larger and more motile than the rest, which were variable in both size

and degree of motility. We have rarely encountered a single motile body in a cell possessing no refractile body or in the protoplasm of the cell when refractile bodies are present. They seem, therefore, to occur only within the refractile bodies of the cells mentiond above as the third type.

Ricketts [74] has already mentioned motile and nonmotile granules in certain of the fungus-like organisms. It is of course highly probable that the motile bodies which we have encountered are identical with his motile granules. After a careful perusal of his description we believe that our motile granules are an entirely different structure, since they are more commonly present, are larger, are usually single and appear to be part of the cell organism.

Reproduction in both cultures and tissue occurs only by budding. With this organism we have in no instance been able to cause the types of proliferation described by Ricketts by cultural, chemical or thermal means, or by animal inoculation. Neither mycelium nor aerial hyphae formed during the six months' period of study. The organism found by us would appear to be a cryptococcus.

De Beurmann and Gougerot,[75] in referring to the oidiomycoses, state that a diagnosis by direct examination of material may suffice, but it can lead to error. If a yeastlike organism is found, cultures should be made on Sabouraud's medium. At first cultures may consist entirely of round budding cells, later in subcultures one can find filaments exclusively, with all the characteristics of *Oidium* (Linck).

Komaya [76] states that in his experience yeasts when injected into animals will always produce mycelium.

Sasakawa [77] was unable to confirm the conclusions advanced by de Beurmann and Gougerot relative to the gradual transformation from budding cells into mycelium, even in yeasts which had been studied for years.

Sabouraud [78] maintains that yeasts do not produce filaments when they affect the tissues; they do so only on artificial mediums. In his

74. Ricketts: Oidiomycosis (Blastomycosis) of the Skin and Its Fungi, J. M. Res. **1**:377-547, 1901.

75. De Beurmann and Gougerot: Les nouvelles mycoses, Paris, Masson et Cie, 1911, pp. 53 and 54.

76. Komaya: Ueber die Wirkung alter Kulturen pathogenen Hefen, Dermat. Wchnschr. **97**:873-880, 1923.

77. Sasakawa: Zur Systematik pathogener und parasitischer Hefen (Morphologisch-Biologische Studie), Centralbl. f. Bakteriol. u. Parasitenk. **87-88**: 269-281, 1921-1922.

78. Sabouraud: La question des intertrigo-mycoses (a propos du rapport de M. Petges au Congrès récent des Dermatologistes de langue Française), Ann. de dermat. et syph. **4**:425-432, 1923.

experience, when mycelial threads have been found in cases of intertrigo they have not proved to be yeasts. He questions finding both yeasts and mycelial threads in the same preparation.

Samson [79] found no constant characteristic biologic differences between strains of brewer's yeast, yeasts from some of Fabry's cases and Soorpilze.

Rabbits were used for studies on immunology and pathogenicity. For subcutaneous injection, a three day growth on agar tubes of Sabouraud's solid medium was emulsified in about 2 c.c. of saline, and one half of the amount was injected. By the end of four or five days, a swelling was produced, which gradually increased until by the end of a week an indurated, freely movable nodule with a diameter of from 2 to 4 cm. is produced. These nodules, as a rule, attained their maximum size within two weeks. A gradual decrease then began, but a complete reduction required a month or more. Depilation did not occur. On incising such a lesion, one obtained a tenacious, granular cheesy material, from which pure cultures of the organism were readily obtained. Microscopic examination showed it to be composed of a great number of actively budding yeast cells, together with a few pus cells. There was no change in fermentation reactions, other cultural characters or in the morphology of the organism. Increased pathogenicity was noted on animal passage. A suppurative or ulcerative lesion was not produced. No noticeable immunity was produced in animals after inoculation, although successive subcutaneous injections produced smaller lesions than the first ones.

Considerable difficulty has been experienced by us in attempting immunization by the intravenous injection of either broth or agar growth, since in every instance death has occurred after the first injection. The time of death is proportional to the amount of culture injected; those animals receiving the smallest dose survive the longest (forty-eight hours). Death is preceded several hours by only moderate respiratory symptoms, and on necropsy no characteristic changes are found in any organ, the lungs showing only moderate congestion and edema. The organism may be recovered from the heart blood in practically all animals. Embolism has been considered as a cause of death, and with this in mind organisms washed in saline resuspended in saline and filtered have been used, with the result that death occurred as before.

Using the serum of animals receiving subcutaneous injections, agglutination of filtered seventy-two hour broth cultures occurred within from six to twelve hours at room temperature, such agglutination

79. Samson: Mitteilungen zur Morphologie und zum biologischen Verhalten der bei Erosio interdigitalis blastomycetica gezüchteten Hefepilze, Dermat. Wchnschr. **76**:473-481, 1923.

being positive in dilutions of 1 : 20 to 1 : 640, inclusive. We were unable to repeat this observation using the patient's serum, which was probably because of the mild type of infection produced in man as compared to that produced in animals.

We did not obtain sufficient human tissue for histopathologic study. The lesion produced in the rabbit presents the features of an infectious granuloma with moderate edema of the surrounding tissue. No giant cell or pseudotubercle formation was observed, and only a limited number of eosinophilic leukocytes were seen in the adjacent young fibrous tissue. The central part of the lesion consisted entirely of yeast cells with no pseudocapsule formation, together with a limited number of lymphocytes. Perivascular round cell infiltration was noted in areas immediately surrounding the zone of yeast infection.

COMMENT

Fabry, Berendsen, Stickel, Greenbaum and Klauder, also Burnier and Langeron have found only yeast cells in cases of interdigital yeast infection. These findings are in accord with Sabouraud's comment on the report of Petges at the First Congress of French-Speaking Dermatologists. Burnier and Langeron in their case and Greenbaum and Klauder in one case called the organism which was found a cryptococcus. Most writers have found both yeast cells and mycelium. Those who have studied the scalp lesions of pityriasis capitis have found only yeast cells, no filaments.

In our experience, animal inoculation and animal passage did not result in changing the original morphology of the organism. Perhaps a longer study than six months as in our case might have given different results. This was not the case in Sasakawa's extensive researches which, as already quoted, dealt with some yeasts under observation for years.

In view of the confusion regarding these organisms, we hesitate to say whether the organism found by us is a hitherto undescribed yeast. In some respects it resembled the findings of Ricketts, but it did not produce lesions like those of true blastomycosis. In this connection the comment might be made that the name "erosio interdigitalis blastomycotica" as employed by Fabry, besides being somewhat unwieldy, would tend to cause confusion with the true blastomycosis. To avoid confusion it would seem best to consider the organism isolated from our case as simply a yeast belonging to the cryptococcus group, according to the classification advocated by Castellani and Chalmers.

CONCLUSIONS

Yeast infections seem capable of producing a variety of skin lesions.

In lesions which are identical from the clinical standpoint, different yeasts are found.

In these cases cultural studies should reinforce the direct examination.

Cases with a geographic, well-marked border along with a loosened fringe of epidermis should be studied with the yeasts in mind.

It would seem as though a number of cases called "intertrigo" are in reality due to yeasts.

In cases of this kind the lack of response to orthodox treatment for intertrigo, eczema and other conditions which are simulated, should be borne in mind.

The attempt to class all of the cutaneous yeast infections under the heading of "Soor," as suggested by Kumer, would appear to require further confirmation.

7 West Madison Street.

ROENTGEN-RAY TREATMENT OF VERRUCA PLANTARIS

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The roentgen-ray treatment of plantar warts has several advantages over surgical removal or medicinal applications. In respect to surgical removal, these are: painlessness of application, freedom from danger of infection and the nonproduction of disability; while over medicinal applications, roentgen-ray treatment possesses the advantages of quicker relief from the pain which commonly accompanies these lesions and greater certainty of cure.

The efficacy of roentgen-ray treatment of this disorder has been attested to by several writers, though without uniformity of results. Among those who have recorded their experiences are Hazen and Eichenlaub,[1] MacKee,[2] Howard Fox [3] and Nancel-Pinard.[4]

Hazen and Eichenlaub treated sixteen patients, fifteen of whom were cured. The number of treatments required for cure ranged from one to seven. The dosage was 1⅓ skin units, unfiltered. There were no recurrences.

MacKee mentions treating sixty patients, in thirty of whom the final result of treatment was known. Of this number, twenty were cured, four improved and six were failures. Six patients were cured in one treatment. MacKee used, as a first dose, 1 to 1¼ skin units after removing the surrounding callus. The second dose, when necessary, was 1½ to 2 skin units. All doses were unfiltered. MacKee mentions that Wise cured seven patients by radiation, but no details of dosage were recorded.

Fox reported cures by roentgen-ray treatment in six of nine patients. The average number of treatments were two, and the average total dose 2¾ skin units.

Nancel-Pinard reported his results in forty-two cases. This author has employed radiotherapy since 1907. At first, his doses were small, and several treatments were required. Later, he gave larger doses, and nearly always obtained a cure with one treatment. His doses were 6 to 7 Holzknecht units (1½ to 1¾ skin units according to MacKee's desig-

1. Hazen, H. H., and Eichenlaub, F. J.: Roentgen-Ray Treatment of Verruca Plantaris, J. Å. M. A. **74**:1311 (May 8) 1920.

2. MacKee, G. M.: Roentgen-Ray and Radium Treatment of Diseases of the Skin, Philadelphia, Lea and Febiger, 1921.

3. Fox, H.: The Roentgen-Ray in the Treatment of Skin Diseases, Arch. Dermat. & Syph. **9**:13 (Jan.) 1924.

4. Nancel-Pinard, M.: Note sur le traitment des verrues plantaires par la radiotherapie, Bull. Soc. franç. de dermat. et syph., p. 280, 1921.

nation) unfiltered. Nancel-Pinard thinks it best to remove the hyperkeratosis.

A summary of the experiences of these authors shows that the roentgen ray is curative in the majority of cases of this disorder. This question settled, it becomes of value to determine the dosage which will cure in one treatment without danger of serious effects. The cure of this painful disorder by one treatment is desirable because the effect of treatment is delayed from three to six weeks and the interval between treatments, provided a second or others are required, is, of necessity, at least four weeks. If the first treatment has been unsuccessful, the period of waiting following the second treatment is not usually borne philosophically by most patients, in my experience.

The material at my command has been collected and analyzed with particular respect to these considerations. Briefly stated, the most effective single and, at the same time, safe dose has been sought.

END-RESULTS

In all, fifty-three patients were treated. The end-result of treatment is known in forty-five of them, and these alone will be considered. All treatments have been unfiltered, and no attempt has been made to remove the callus which surrounds and overlies these lesions. There were no untoward effects from treatment.

Of the forty-five patients, thirty-one presented single and fourteen multiple verrucae. The largest number encountered was 136, this number developing suddenly on the foot of a boy after one roentgen-ray treatment. The duration of the disorder varied from ten days to one year. Most of the patients had previously tried various remedies.

Forty-two patients were cured by the roentgen ray; in three resort to other measures was necessary. Thirty-four patients were cured by one dose, and eight required two treatments. In the cases in which roentgen-ray treatment was a failure, two patients received one dose, and one received two doses. In one of the unsuccessful cases, the wart was removed by monopolar endothermy because it was still very painful seven weeks after the first treatment. In another unsuccessful case, that of a boy with a sudden outcrop of new warts after the first treatment, these were destroyed by cauterization under general anesthesia; and in the third unsuccessful case, the patient was cured by one radium application after two roentgen-ray treatments had failed to affect the lesion. It is possible that a third roentgen-ray treatment would have had the same effect as radium in this case.

For the purpose of analyzing the effect of intensity of dosage, the patients cured by irradiation were divided into two groups; one group was comprised of patients receiving not more than 1¾ Holzknecht skin units, the other, of patients receiving from 2 to 2½ skin units.

From the tabulation of patients cured, it will be seen that approximately 36 per cent of those given not more than 1¾ skin units as an initial dose, required a second treatment for cure; in only about 10 per cent of those given an initial dose of 2 to 2½ skin units was a second dose necessary. The latter dose was not exceeded for fear of causing injurious effects.

There were no recurrences. The disappearance of pain after the first treatment, mentioned by others, was noted in many cases. A few patients complained of recurrence or exacerbation of pain occurring about two weeks after irradiation.

Effect of Intensity of Dosage in Patients Cured

Dose*	One Treatment Required	Two Treatments Required	Percentage Cured by One Treatment
Group I: H1-H1¾	17	6	65+
Group II: H2-H2½	17	2	89+

* The roentgen-ray dose is in skin units. One skin unit is equivalent to four Holzknecht units.

CONCLUSIONS

The experience recorded herein would indicate that one roentgen-ray dose of 2 to 2½ skin units unfiltered is safe and will cure approximately 90 per cent of the patients. If this dose is used, no attempt should be made to remove the hyperkeratotic epidermis, and the lesion should be closely shielded with lead.

When the thickened epidermis has been removed, or when a number of closely grouped warts are treated simultaneously through a single window, a dose not exceeding 1¾ skin units is safe and will cure about 66 per cent of the patients.

313 Second National Bank Building.

DERMATOPHYTID

COMPLICATING DERMATOPHYTOSIS OF THE GLABROUS SKIN *

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In 1911, Jadassohn [1] called attention to a lichenoid exanthem on the trunk, occurring in children suffering from tricophytic kerion. Since that time, many articles on the subject have appeared in European literature, and the word tricophytid is used to describe this eruption and others of the same origin. More recently, a similar series of eruptions called microsporid has been described occurring as a complication of microsporon infection. I propose the word dermatophytid to cover both groups of cases.

The eruption is in many ways analogous to tuberculid, and may assume a variety of clinical forms, the commonest of which is the rapid development of large numbers of lichenoid papules occurring singly or in groups. A scarlatiniform rash has been observed, usually as an early stage of the lichenoid form. Vesicular and vesiculopustular cases are fairly common, and lesions resembling pityriasis rosea are reported. In some cases the eruption has assumed the form of erythema multiforme; in others, that of erythema nodosum. The nodules usually disappear without breaking down, but in Bruusgaard's [2] case, the nodules were studded with miliary pustules.

It is now generally believed that this eruption is hematogenous. Many of the patients show constitutional as well as local symptoms; the outbreak is symmetrical, and is simultaneous on widely separated parts of the body; it spreads rapidly; and, in some cases, mycotic organisms, proved by culture to be the same as those found in the primary focus, have been found in the blood, in the lymph nodes and in the deeper parts of the eruption itself. The presence of the parasite in the eruptive lesions is not constant, and has been established in the lichenoid form only in the earliest stages. The injection of trichophytin, even after the disappearance of all active lesions, has been followed by the appearance of tricophytid. The most satisfactory hypothesis to account for these observed facts is to assume a sensitization of the skin by the

* Read at the Forty-Eighth Annual Meeting of the American Dermatological Association, Washington, D C., May, 1925.

1. Jadassohn: Discussion Cor.-Bl. f. schweiz. Aerzte, 1912, p. 22.

2. Bruusgaard: Haematogenous Infection in Trichophytia, Acta dermat. ven. 3:21 (Sept.) 1922.

passage of the organisms themselves, or of toxins elaborated by them, or both, from the original active lesion into the blood stream, and the reaction of the sensitized skin to further irritation by formed elements or by toxins. At the same time there is usually a production of antitoxins, leading to a spontaneous cure.

It is my belief that an analogous group of eruptions occurs in connection with severe mycotic infections of the hands and feet, and that it occurs with much greater frequency than has been believed hitherto. A paper read by me [3] before the American Dermatological Association in 1921 contained the histories of two such cases, which are here repeated.

REPORT OF CASES

CASE 1.—Mrs. P., who called at my office, Jan. 3, 1921, had recently removed to New York from Long Island, and had been very busy settling a new house. There is much poison ivy in the part of Long Island in which she lived, but so far as she knew, she had not been exposed to it. In settling her new home, her hands had been subjected to much irritation from dirt and frequent washing. The eruption began on one finger in November, 1920, and spread at first gradually; then, following the use of petrolatum, about December 20, it spread rapidly over both hands. When I saw her, there were many vesicles on the sides of the fingers and on the entire palmar surface of both hands; on both forearms there was an eruption of small papules. Although microscopic examination of the roof of a vesicle failed to reveal any fungus, Whitfield's ointment was prescribed for the hands and calamin lotion for the forearms. A week later, the eruption was worse on the hands and had involved the dorsal surface. Tubes were planted from the roof of a bulla on the finger first involved; the use of Whitfield's ointment was stopped, and the patient was instructed to scrub the hands vigorously with soap and warm running water, and then apply calamin lotion. Two days later, she telephoned that this treatment brought immediate relief, and that the skin was fast returning to normal. When I saw her a month later, there remained only a slight scaling on one finger. In the meantime, growth had started in one of the tubes, and the organism proved to be *Trichophyton asteroides*.

CASE 2.—A young woman had had a localized vesicular eruption on the sole of the right foot and on the radial surface of the left little finger for about two weeks, when she came to the hospital for treatment. Mycotic organisms were demonstrated from the hand and foot. The patient was given Whitfield's ointment, half strength, and four days later returned with an acute vesicular outbreak of both hands and feet, involving palms and soles, the lateral surface of the fingers and the dorsum of the right foot. Mycelia were demonstrated from a vesicle on the part of the foot first affected, but could not be found in the fresh vesicles on the dorsum of the foot. On both legs, both forearms and on the upper part of the chest in front was a sparse erythematous eruption, consisting of pale pink, oval, slightly elevated spots, from about one fourth to one half inch (0.6 to 1.2 cm.) in diameter, some of which presented a small vesicle, which was sometimes in the center, sometimes at the periphery. The use of Whitfield's ointment was discontinued, and the patient was told to wash thoroughly with

3. Williams: The Diagnosis of Some Eruptions on the Hands and Feet. Arch. Dermat. & Syph. **5**:161 (Feb.) 1922.

soap and warm water and to use calamin lotion. This she did, and within three days the eruption on the hands and feet was receding. The erythematous eruption on the forearms and legs persisted, and now bore a striking resemblance to pityriasis rosea, with pale center, and pink, slightly scaly border, but without vesicles. Except for a few spots in the sternal region, the trunk was free. Scrapings from the site of the original lesion on the foot, from a vesicle on the wrist and from one of the lesions resembling pityriasis rosea were all negative.

Attention was called, at that time, to the analogy between these cases and tricophytid complicating kerion. Since that time two more cases have come to my attention.

CASE 3.—S. G. K., a man, aged 30, first seen on Feb. 7, 1924, said that the eruption began on the left sole, just back of the ball of the foot, as a group of vesicles, about two months before the visit. The eruption spread gradually, and at the time of the visit, the whole of the hollow of the instep and the external and internal borders of the left foot were irregularly covered with single and grouped vesicles, some forming patches from which the epidermis had scaled off. There was moderate scaling only between the toes. On the right foot, there were scattered groups of vesicles on the hollow of the instep and on the sole. There was no scaling, and the toes were little or not at all involved. On the dorsal surfaces of the feet and on both lower extremities, extending to the middle of the thighs, there was an eruption of fine vesicles and erythematous spots; those high on the thighs looked like a folliculitis. The trunk was covered with small, dull red, follicular papules. Both palms were covered with deep vesicles occurring singly and in groups. Some of the older vesicles had dried, leaving the small, brown disk so characteristic of tinea of the instep. Others had ruptured, leaving irregular, slightly depressed scaly areas. The backs of the hands were covered with a slightly scaly, erythematopapular eruption. The backs of the fingers were little or not at all involved. Both forearms were covered with an acute erythematous dermatitis, suggesting strongly the irritation caused by sulphur. On the arms there were scattered red areas from about one-fourth to one-half inch in diameter, vague in outline, slightly elevated, and sometimes with a little scaling like that of pityriasis rosea. The patient said that the eruption on the forearms was like this about ten days before. The scalp showed a moderate amount of dandruff, and the middle of the face was slightly reddened and scaly. Examination of the vesicle roofs from the feet showed many mycelial rods. Cultures were not successful. No microscopic examination was made of the material from the upper extremities. Whitfield's ointment was prescribed, to be rubbed on the palms night and morning, and into the feet each morning, some of the salve to be left on the feet during the day, so that the friction of walking would rub it thoroughly into the skin. Tincture of iodin, 1½ drams (5.6 c.c.), diluted with alcohol to make an ounce, was painted on the feet at night. Calamin lotion was prescribed for the dermatitis, but not for the infected parts. The strength of Whitfield's ointment was increased on subsequent visits up to 11 per cent. of salicylic acid and 22 per cent. of benzoic acid, the stronger preparations being used only on the feet. Under this treatment, there was rapid improvement of all symptoms. At one time dermatitis appeared on one wrist, caused apparently by a strong Whitfield's ointment (salicylic acid 9 per cent., benzoic acid 18 per cent.), but this subsided quickly, and it was interesting to note that it was not of the same appearance as the eruption first seen. The patient had a mild recurrence of the dermatomycosis on the palms and soles about a month after his first visit, which again yielded quickly to treatment.

CASE 4.—F. S., a man, aged 45, came first to my office, July 1, 1924, saying that he had noticed maceration of the skin between the toes for two years, but had paid no attention to it. About ten days before his visit, he noticed a group of vesicles on the hollow of the left instep. A few days later, he noticed a few vesicles on the fingers which increased slowly until two days before the visit, when there was a rapid development of vesicles over the backs of both hands, the sides of the feet and the top of the left foot. The only local applications made before the visit were of stearate of zinc to the left foot and Wilkinson's ointment on the hands. Examination showed a typical group of thick roofed vesicles, about 5 cm. in diameter, on the hollow of the left instep. There were also a few scattered vesicles. The roofs of these vesicles were loaded with mycelia—every specimen was full of them. Culture on Sabouraud's peptone and peptone glucose, made for me by Dr. Howard Fox, showed growth of an organism resembling Priestley's tricophyton interdigitale. There was maceration between the toes, but no organism was found. On the dorsum of the left foot, and extending in diminishing numbers about 2 inches (5.08 cm.) above the malleoli, on the lateral borders of the right foot, extending a little above the malleoli, on both hands, but especially on the backs, there was a profuse eruption of small thin roofed vesicles. There was a variable but always moderate erythema, as from congestion, and a little swelling. The earliest lesion was a tiny pink spot, but serum seemed to be present in all, except perhaps the very earliest. There was a little dry scaling on the backs of the fingers, but no maceration and no vesicles. Examination of scrapings of the skin between the fingers and of the thin vesicles from the hands showed no mycelia. He was given an ointment containing salicylic acid, 6 per cent., and benzoic acid, 12 per cent., to rub into the left foot twice daily, and calamin lotion for the rest of the eruption. A week later he reported by telephone that the eruption was subsiding, and the skin beginning to peel a little from the backs of the hands. In April, 1925, he reported that there had been no recurrence.

THEORIES CONCERNING CAUSE OF ERUPTION

These four cases present certain important features in common. In all, there was a history of an eruption on the hand or foot, which spread slowly for a variable period of time, and which was followed by the rapid development of an eruption, most acute on the hands and feet, and spreading thence over the extremities and trunk to a greater or less extent. In each case, the primary eruption seems to have been severe, although localized, before the secondary eruption developed. In all, a mycotic organism was demonstrated from the infected region, once by culture and three times by direct examination, while in two—the only ones in which search was made—mycelia could not be found in the fresh, thin roofed vesicles. In all, improvement and apparent cure was rapid, and in the cases in which a relapse was observed, this occurred in the infected area, not in the distant parts.

The analogy between this group of symptoms and those occurring in trichophytid complicating kerion, is evident, and it is my belief that the two have the same pathogenesis. The other possible explanations of the observed facts follow.

1. The eruption is caused by an external physical or chemical irritant. This is plausible, and indeed a diagnosis of dermatitis venenata was seriously considered in three of the foregoing cases.

In Case 1 ivy poisoning was considered, but was ruled out, because the eruption on the forearms was papular, not vesicular, and although extensive, it did not lead to serous exudation. Irritation from soap or water is a most unlikely explanation—the eruption disappeared during a course of vigorous scrubbing. No irritating drugs had been used.

The secondary eruption in Case 2 occurred after the application of Whitfield's ointment, but it was not confined to the areas on which the ointment was used. The eruption produced in sensitive skins by Whitfield's ointment is usually a congestive erythema, followed by maceration and the peeling off of white sodden flakes, if the ointment has been unusually strong, whereas in this case the eruption consisted of vesicles and discrete, sharply outlined erythematous plaques. No other drug had been used, and there was no exposure to poison ivy and no excessive use of soap and water.

In Case 3 there was nothing in the patient's mode of life to suggest exposure to a cutaneous irritant. My notes make no mention of any local treatment, but this may be an oversight. It is to be noted, however, that this patient developed a dermatitis on the dorsa of the hands and on one wrist during treatment with strong Winfield's ointment; that this dermatitis was of a different appearance from the eruption which he first presented, and that it did not tend to spread. The secondary eruption extended to parts in the arms and thighs which are not ordinarily exposed to external irritants, and it occurred in patches rather than as a diffuse dermatitis.

The eruption on the back of the hands in Case 4 at first sight strongly suggested ivy poison, but closer examination excluded this diagnosis. The vesicles were superficial and thin roofed, not as deep as in ivy poisoning, and there was not nearly as much cutaneous and subcutaneous swelling as one would expect in a dermatitis venenata showing so many vesicles. The improvement under treatment with calamin lotion was much more rapid than would occur in a case of ivy poisoning of equal severity, and the subjective symptoms were much milder. I cannot think of any dermatitis of external origin that would be at the same time so extensive, so acute, objectively, and yet so mild and transitory. This patient had used only boric acid and stearate of zinc on the foot; on the hands, he used Wilkinson's ointment twice, with no improvement. Of course, the ointment may have aggravated the eruption, but the eruption was present before the application was made.

2. The second theory advanced to explain these secondary eruptions is that they are due to infection by one or more of the ordinary pyogenic

cocci. Many of the eruptions complicating kerion will bear this interpretation. When we see a folliculitis extending from the scalp to the shoulders, diminishing in intensity as it becomes more distant from the primary focus, the nearer lesions being small pustules and the more distant ones small, inflammatory papules, it is perhaps reasonable to look on the process as simply a superficial pus infection; nevertheless, it is impossible to distinguish the small, outlying follicular papules seen in these cases from the follicular papules observed on distant parts of the body in other cases in which there are no intermediate pustules. In the present series, there were no pustules, either at the primary focus of infection or elsewhere, the secondary lesions being either vesicles, small papules, or erythematous plaques, with no inflammatory reaction beneath or around them, except in some cases, a slight congestion. The rapid resolution of the lesions is also against a coccogenic origin.

3. A third theory of the pathogenesis of these secondary eruptions would regard them as produced by the growth in situ, after inoculation from without, of organisms derived from the primary focus. This explanation does not seem to me to be admissible, for the following reasons: (1) The eruption is widespread and fairly symmetrical, whereas even widespread tinea circinata shows no tendency to symmetry. (2) The outbreak is sudden, and usually single, whereas an eruption spread by local, external inoculation develops spot by spot, and is leisurely in its progress. (3) The eruption is rapid, development and recession usually being accomplished within a few days. (4) The erythematous types show an alteration in the deeper parts of the skin before there is any change in the epidermis. (5) In the kerion cases, the secondary eruption develops, as a rule, at a time when there are few or no organisms to be found in the original focus, the great majority having already disappeared.

There are two features in the course of the cases here reported which speak strongly in favor of their being associated with the development of specific toxins. In the first place, the dermatophytid appears only when the original process has reached a considerable development, with deep vesicles, and usually as a sequel of an acute exacerbation. I have not seen it occur as a complication of tinea cruris or of superficial tinea of the toes. In the second place, the primary focus usually responds readily to treatment, or even disappears practically without treatment. This is analogous to the spontaneous cure of kerion, with which all dermatologists are familiar.

DOUBTFUL CASES

In addition to the four cases here reported in full, I have seen two doubtful cases.

CASE 5.—H. C. S., a man, aged 32, came to me, Oct. 28, 1924, with a history of an eruption on the right side of one finger, beginning five months before, and diagnosed tinea by Dr. C. J. White. He stated that about three weeks before the visit, there was a sudden flare-up in the eruption, soon followed by an outbreak on both forearms, reaching as far as the elbows. This disappeared again in a few days. When I saw him, the forearms were clear, and on the hands there were only small patches of roughness and scaling.

CASE 6.—H. R., a woman, aged 40, had had an occasional outbreak of vesicles on the hands for many years. Three weeks before her visit, a vesicular eruption developed on the dorsal and palmar surfaces of the hands and fingers. Three days before her visit, she received at a hospital a roentgen-ray treatment consisting of ¼ skin unit on the dorsal and on the palmar surfaces of the hands. Within forty-eight hours she developed bullae on the palms and fingers, and an acute erythematovesicular eruption on the arms and body. The eruption faded quickly. Dermatophytes could not be demonstrated.

CASES IN THE LITERATURE

A search through recent literature has revealed a small number of analogous cases.

The first was reported by Naegeli,[4] and occurred in a boy 9 years old who worked among cattle suffering from a skin disease and who, himself, showed circular patches on the right wrist and forearm. These seemed to be healing, when the boy developed an acute follicular tonsillitis. This was soon followed by a small macular, often confluent, bright red scarlatiniform eruption, covering almost the entire body, with the exception of the face and the extremities. In a few places there were bright red, lichenoid papules, and in a very few places, branny scaling. The eruption was transitory. It became more follicular as it faded, and at the end of five days, there was only a slight furfuraceous scaling over most of the affected areas, with seborrheic, psoriasiform plaques where the eruption had been most extensive, as on the sides of the chest. Mycotic organisms were not found, but the patient gave a strongly positive reaction to tricophytin. Naegeli believes that the skin was sensitized by the lesions on the arm, and that the antigen which set up the general eruption may have been (1) nonspecific—the toxins from the tonsillitis, as salt solution may set up a tuberculin reation in a tuberculous subject; or (2) organisms remaining deep in the old lesions, only apparently healed, and mobilized by the intercurrent angina; these may have acted by the distribution of formed elements through the blood or by dissolved toxins.

In the same year, Dreyer[5] showed at the Cologne Medical Society, a girl, aged 11, who had on the dorsal surfaces of each foot a round patch about an inch and a half in diameter, in scrapings from which mycelia were found in large numbers. The eruption had been present for seven weeks. Shortly before the presentation, a profuse eruption appeared on the extensor surface of the forearms, especially around the elbows, consisting of irregularly distributed vesicles, with clear contents and a red border. After a long search, mycelia and spores were demonstrated in these vesicles. The vesicular eruption spread over the arms, and

4. Naegeli: Scarlatiniformes Spättricophytide nach Angina Lacunaris mit in Abheilung begriffenem Primärherd am Handgelenk, Arch. f. Dermat. u. Syph. **134**:323, 1921.

5. Dreyer: Case Presentation, München. med. Wchnschr. **68**:1000, 1921.

appeared also on the buttocks and thighs, while the temperature rose to 38 C. (100.4 F.). Large vesicles appeared on the soles, and the case has therefore been referred to as a pemphigoid trichophytid, but it seems to me much more likely that these vesicles on the feet were simply an extension from the active lesions on the dorsum. In view of the discovery of mycelia in the vesicles on the forearm, it is questionable whether the case belongs in this series; but the rapid extension of the eruption, and its first appearance on a part of the body far remote from the original focus, suggest at least a general sensitization of the skin; and it may be that the few organisms present in the secondary rash were brought there by the blood.

In 1923, Rajka[6] reported the case of a woman, aged 37, who had suffered from a slowly spreading tinea pedis for six months. When first seen, there was a severe tinea of the distal half of the dorsal surface of the right foot, extending toward the heel on both borders. Culture showed *Trichophyton gypseum.* While under observation, she developed on both forearms, especially on the flexor surfaces, a few scattered pinhead to milletseed sized, hyperemic, somewhat edematous spots, accompanied by headache and general weakness. The eruption gradually spread over the trunk and extremities, and in places became confluent, so as to form bright red patches as large as the palm of the hand. On the tops of many of the small papules were tiny vesicles. On the forearms there was fine scaling, and here and there pea-sized patches surrounded by a horny border. No mycotic organisms could be demonstrated by the microscope or by culture. After the injection of trichosan (Popay), a proprietary preparation—evidently a killed culture of trichophyton, there was a general reaction characterized by fever (102 F.) and headache, and a local reaction also, fresh vesicles appearing on the foot while on other parts many of the patches became confluent and scarlatiniform. Following this, recovery was rapid.

At a meeting of the St. Louis Dermatological Society in December, 1923, Grindon[7] showed a man who for years had had macerated epidermis between the toes, and who, two months before presentation, developed a patch of minute vesicles at the site of an old appendectomy scar, soon followed by an eruption of pinhead sized vesicles, singly and in groups, over the trunk and upper extremities. Grindon thought the whole eruption was epidermatophytosis. Mook thought the eruption on the trunk and arms was eczematoid dermatitis. It is possible that the condition between the toes was tinea and the rest a dermatophytid. No microscopic examination or culture was reported.

Pusey[8] reports the case of a patient who had a vesicopustular mycotic dermatitis of the hands and feet, and who presented also an erythema-multiforme-like eruption of the forearms and arms.

The following two cases illustrate the production of dermatophytid by the injection of trichophytin, when the skin has been sensitized by a superficial tinea not involving the hairy parts.

Delbanco[9] presented a boy, aged 8 years, who had a superficial tinea involving the entire face, which was refractory to external medication. After a single

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6. Rajka: Skarlatiniformes Trichophytide bei dysidrosähnlicher Trichophytie, Dermat. Wchnschr. **76**:574, 1923.

7. Grindon, Joseph: A Case of Epidermophytosis of the Toes, with Generalized Papulo-Vesicular Lesions, Arch. Dermat. & Syph. **9**:534 (April 1) 1924.

8. Pusey: Principles and Practice of Dermatology, Ed. 4, New York, D. Appleton and Company, 1924, p. 794.

9. Delbanco: Case Presentation, Dermat. Wchnschr. **70**:202, 1920.

intracutaneous injection of trichosan on the left arm, there was rapid healing of the face, with the appearance of lichen trichophyticus on the trunk.

Seeman and Rajka[10] reported a severe onychia of all the nails of the hands and the left foot, with trichophytosis of the hands and feet, caused by *Trichophyton gypseum,* which gave a positive reaction at the site of injection of trichosan, and the appearance of annular erythematous areas lasting twelve days, following the inoculation of the culture on scarifications. They mention no generalized eruption previous to the inoculation.

Author's Case.—A case of my own is interesting as showing how the reaction of the skin may be altered by a long existing tinea of the nails. The patient was a woman, aged 43, whose scalp was scarred as by an old favus, dating from childhood. She stated that sixteen years before examination, she had had a round patch about an inch and a half in diameter on the back of the right hand, which had lasted several months, and had healed under treatment. The nails had been involved for six or seven years, and the nail scrapings were full of mycelia. Cultures were made repeatedly, but were unsuccessful. The rest of the hands were normal with the exception of a mycotic dermatitis at the finger tips, and one spot about an inch in diameter on the ulnar border of the right wrist and base of the hand. The area showed only a loss of the most superficial parts of the horny layer, and a few thin flakes, projecting inward from the periphery. There was no infiltration, no thickening, no cracking, no sign of inflammation; yet the flakes at the periphery, too thin to be called scales, were loaded with mycelia.

SUMMARY

Kerion, whether of the scalp or beard, may be accompanied by constitutional symptoms and by a generalized eruption.

Severe tinea of the hands and feet may be accompanied by an analogous, generalized eruption.

The generalized eruption is hematogenous, and may be caused by organized elements, by toxins, or by both.

An essential feature in the pathogenesis of the generalized eruption is a sensitization of the skin, which results in an alteration of its reaction to mycotic organisms and their toxins, whether introduced from within or from without.

As a rule, the secondary eruption is self-limited, and its fading is soon followed by the healing of the primary lesion.

114 East Fifty-fourth Street.

10. Seeman and Rajka: Schwere Nagel-und oberflächliche Hand und Fuss Trichophytie entstanden in Anschlusse an die Impfung des Trichophytonpilzes, Arch. f. Dermat. u. Syph. **143**:9, 1923.

XLVII.—CULTURES FROM THE SKIN OF APPARENTLY NORMAL FEET *

THEODORE CORNBLEET, M.D.
ST. LOUIS

It has been suggested both in informal discussions and at society meetings that the frequent finding of fungi in the various cases of vesicular, papular and squamous dermatitis of the hands and feet was an evidence of the ubiquitous distribution of fungi on the human skin, and not evidence of pathogenicity. It was suspected by some observers that the fungi of the trichophyton and epidermophyton groups might be more or less normal inhabitants of the human skin and that their occurrence in the inflammatory conditions above mentioned might be accidental in the same sense that the occurrence of various staphylococci and other organisms in these lesions is accidental.

In an attempt to determine this point, at the suggestion of Dr. Martin F. Engman, cultures were made from the skin of apparently normal feet of 100 medical students, physicians and technicians. The hands, feet and genitocrural regions of these persons were carefully examined for evidence of dermatitis or vesiculation and scale formation, and a careful inquiry into their previous history was made. Cultures were made from no one who presented evidence or history of previous infection.

The interdigital web between the fourth and fifth toes was scraped with a small sharp curet. The epithelium thus obtained was planted with a sterile platinum loop on test-tube slants of Sabouraud's medium. All instruments used were carefully sterilized for each person. It was soon found that if the upper layer of scrapings was discarded and the scrapings from the deeper layers utilized for the cultures, little contamination with bacteria occurred. All molds and fungi were subcultured onto Sabouraud's medium in petri dishes after three weeks' growth at room temperature.

RESULTS OF CULTURES

A variety of common molds and yeasts were recovered and only three possible pathogenic fungi.[1] The latter were two cultures of *Epidermophyton inguinale* and one culture of *Microsporon audouini.*

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* Studies, observations and reports from the Dermatological Departments of the Barnard Free Skin and Cancer Hospital and the School of Medicine, Washington University, St. Louis, Mo., U. S. A., service of Drs. M. F. Engman and W. H. Mook.

1. Dr. George Moore of the Missouri Botanical Gardens assisted in the identification of the fungi found in this study.

SUMMARY

Three out of 100 cultures from the fourth interdigital space of apparently normal feet yielded cultures of pathogenic fungi.

The weight of present evidence is in favor of the pathogenicity of the fungi under consideration.

NOTE.—Since this study was completed, J. F. Burgess [2] has reported a similar study. He too made cultures from 100 apparently normal feet and in no case did he obtain a positive culture of any variety of ringworm fungus. He believes that apparently a ringworm fungus is rarely present on the skin surfaces without causing definite and characteristic reactions.

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2. Burgess, J. F.: Fungus Infections of the Skin: Report of Cultural Study of Flora of Ringworm, Arch. Dermat. & Syph. **12**:853 (Dec.) 1925.

ASSOCIATION OF INTESTINAL INDIGESTION WITH VARIOUS DERMATOSES

BASED ON AN ANALYSIS OF MORE THAN 900 FECES EXAMINATIONS: A STATISTICAL REPORT

HANS J. SCHWARTZ, M.D.
NEW YORK

The association of gastro-intestinal disturbances with various dermatoses is emphasized in all the textbooks, but few statistics are available showing the frequency of such association.

The present report is based on an analysis of more than 900 feces examinations made in various dermatoses. About 200 of these examinations were made with the patient on a Schmidt test diet, the balance with the patient on an average mixed diet. Analysis of the results revealed no striking difference between the two groups, so they have been incorporated in the one table.

All the cases have been taken from the private records of the late Dr. James C. Johnston and myself. The examinations were made as a routine procedure whether or not the patients complained of any symptoms of gastro-intestinal disturbance; and it may be pointed out that some of the most marked examples of protein putrefaction or carbohydrate fermentation have been found in patients who did not complain of subjective symptoms. Only definite examples of protein putrefaction or carbohydrate fermentation have been placed in the respective columns; stools showing only slight evidence of either have been classed as normal.

Examination of the feces was carried out according to the following scheme:

EXAMINATION OF FECES

Macroscopic	Microscopic	Chemical
Color	Muscle fibers	Reaction
Consistency	Starch	Blood pigment
Odor	Fat	Bile
Food residue	Crystals	Carbohydrate fermentation
Concretions	Blood	Albumin putrefaction
Parasites	Pus	
	Mucus	
	Ova	
	Epithelium	
	Bacteria: Gram stain	

COMMENT

Special attention is called to the frequency of intestinal indigestion, as shown by these examinations, in severe acne, eczema ani, the oily type of seborrheic eczema, urticaria, rosacea, furunculosis and pruritus.

High figures were also obtained in dermatitis herpetiformis, erythema multiforme, pemphigus and neurodermite. The number of cases examined is too small to allow of any definite conclusions to be drawn, but the results are at least suggestive.

Lower figures are found in mild acne, other types of eczema and psoriasis.

The cases classed as "Nail dystrophy" form an interesting group, and will be reported in detail in a separate communication. In all these cases all the nails on both hands and feet were involved, the nails being

Analysis of Feces Examinations Made in Various Dermatoses

		Normal		Protein Putrefaction		Carbohydrate Fermentation	
No. of Cases	Disease	No. of Cases	Per-centage	No. of Cases	Per-centage	No. of Cases	Per-centage
5	Dermatitis herpetiformis	1	20.0	..	....	4	80.0
5	Erythema multiforme	1	20.0	1	20.0	3	60.0
4	Pemphigus	..	....	2	50.0	2	50.0
5	Pityriasis rosea	5	100.0	..	....	..	....
4	Pompholyx	3	75.0	..	....	1	25.0
122	Acne—mild	71	58.2	16	12.7	35	28.6
60	Acne—severe	11	18.3	22	36.6	27	45.0
27	Eczema—acute	17	62.9	2	7.4	8	29.6
125	Eczema—subacute	57	45.6	22	17.6	46	36.8
30	Eczema—chronic	18	60.0	4	13.3	8	26.6
16	Eczema—ani	5	31.2	..	....	11	68.7
138	Eczema—seborrheic—dry	80	57.9	15	10.8	43	31.1
90	Eczema—seborrheic—oily	23	25.5	16	17.7	51	56.6
34	Urticaria	11	32.3	5	14.7	18	52.9
102	Rosacea	36	35.2	31	30.3	35	34.3
19	Furunculosis	6	31.5	6	31.5	7	36.8
17	Pruritus	7	36.8	..	....	12	63.1
11	Nail dystrophy	..	....	2	18.1	9	81.8
6	Neurodermite	..	....	..	....	6	100.0
40	Chloasma and pigmentation	32	80.0	2	5.0	6	15.0
30	Psoriasis	16	53.3	6	20.0	8	26.6
48	Miscellaneous	39	81.2	2	4.1	7	14.4

thick, lusterless, opaque and brittle. No dermatosis such as eczema or psoriasis was present in any of them, and they all responded to appropriate internal treatment.

In the miscellaneous group are classed such diseases as alopecia areata, erythema induratum, keratosis pilaris, kraurosis vulvae, lichen planus, prurigo mitis, scleroderma, lupus erythematosus, hyperhidrosis axillae, vitiligo, herpes zoster, etc. They have been grouped together as the number of cases of each disease examined was too small to allow any conclusions to be drawn. The striking difference between the figures obtained in this group and those found in the individual diseases listed above is, however, worthy of note.

A detailed consideration of the application of these findings to the treatment of various dermatoses is reserved for a future communication. Suffice it here to state that the indications for treatment—dietetic, medicinal, etc.—derived from these examinations have proved of great value, and would seem to justify the conclusion that the intestinal toxemia was the cause of the dermatosis in question.

CONCLUSIONS

In the light of our experience we would conclude:

1. Intestinal toxemia is an important etiologic factor in the production of many dermatoses, especially those of the inflammatory type.

2. Examination of the feces gives valuable indications for treatment, and should be carried out as a routine procedure.

MULTIPLE SARCOID-LIKE GRANULOMAS OF THE SKIN OF UNDETERMINED NATURE

SUPPLEMENTARY NOTE *

JOSEPH V. KLAUDER, M.D.
AND
FRED D. WEIDMAN, M.D.
PHILADELPHIA

In the August, 1925, number of the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY [1] we reported a case of multiple sarcoid-like granulomas of the skin of undetermined nature. The patient has since died. We herewith report necropsy findings and further laboratory studies which show that the eruption was of tuberculous origin.

REVIEW OF REPORTED CASE

The case was that of a negress, aged 23, who presented a widespread generalized papular, squamous, nodular eruption which first appeared in December, 1922. The lesions were psoriasiform and infiltrated; some were annular, and others followed the natural line of cleavage of the skin. In the course of twenty-one months, almost all of the lesions involuted, with scar formation, some with prior ulceration. The scars were soft and pliable, resembling the scars of syphilids.

There were constitutional and objective symptoms of an infection, the nature of which was undetermined. Tuberculosis was rightly suspected, but not proved.

Histologically, the picture was that of a granuloma. Laboratory and animal inoculation studies were negative (guinea-pig inoculation of skin lesions and part of epitrochlear lymph node). A study of the case as reported supported the belief that the eruption was of tuberculous causation. The eruption was regarded as a tuberculid rather than as a bacillary tuberculosis.

Necropsy Findings and Further Laboratory Studies.—In September, 1925, tubercle bacilli were demonstrated in the patient's sputum, although many prior examinations were negative. In October, 1925, the patient died. Necropsy disclosed an extensive tuberculous ulcerative enteritis and a massive caseous tuberculosis of the mesenteric lymph nodes. The pathologic picture of the mesenteric lymph nodes and of the intestines led us to believe that the tuberculosis was primary in the intestines. There was also an extensive caseous tuberculosis of the lungs. The extent of fibrosis supported the belief that the pulmonary involvement succeeded the intestinal involvement.

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* From the Laboratory of Dermatologic Research, Department of Dermatology and Syphilology, University of Pennsylvania, and from the Philadelphia General Hospital.

1. Klauder, J. V.: Multiple Sarcoid-Like Granulomas of the Skin of Undetermined Nature: Report of a Case, Arch. Dermat. & Syph. **12**:171 (Aug.) 1925.

Tubercle bacilli were demonstrated in the smears from the lungs. In view of this and since none were demonstrated in the cutaneous lesions and the epitrochlear lymph nodes before the patient's death (original report), even by guinea-pig inoculation, we became interested in knowing how far the tubercule bacilli extended centrifugally, i. e., intermediate between the lungs and skin. Accordingly, we inoculated guinea-pigs with material obtained at necropsy from the following (having in mind both the lymphatic and blood pathways): nodule in lung (control), heart blood, axillary lymph nodes, peribronchial lymph nodes, cervical lymph nodes and skin. Seven weeks after these inoculations only the control guinea-pig (inoculated with the nodule from lung) showed tuberculosis at necropsy.

COMMENT AND SUMMARY

The postmortem studies partly paralleled and confirmed the antemortem studies and amplified them by showing that the organisms were likewise absent in other regional lymph nodes, and were not present in sufficiently large numbers in the circulating blood to be able to produce lesions in the guinea-pigs.

The case is of particular value because the absence of tubercle bacilli in the skin lesions was proved by both antemortem and postmortem guinea-pig inoculation tests, which eliminated the uncertainties of tubercle bacillus staining. It is of further value in that tubercle bacilli were demonstrated in the sputum (and lungs) both antemortem and postmortem.

This case we therefore consider a valid necropsy—a proved one which strengthens our current concepts concerning sarcoid. The skin lesions did not have the histologic architecture of sarcoid, but the absence of living tubercle bacilli from the skin lesions was indubitable, and yet they were present in abundance in the internal viscera. In yet another light, this case was an example of tuberculosis of the skin without living tubercle bacilli—only a short step from accepted, valid sarcoid.

As pointed out in the original report, the histopathologic picture of the skin lesions could not be regarded as that of sarcoid of Boeck. The following statement from the original report is still pertinent: "It is, in all probability, a unique, and to our knowledge, a hitherto undescribed instance of what conforms to our present conception of a tuberculide."

News and Comment

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Max Scheer, Chairman, 616 Madison Ave., New York City.

CHICAGO DERMATOLOGICAL SOCIETY

Paul A. O'Leary, Pres., Rochester, Minn.
F. E. Senear, Sec., 7 W. Madison St., Chicago.

NEW YORK DERMATOLOGICAL SOCIETY

A. Schuyler Clark, Pres., 614 Park Ave., New York City.
John E. Lane, Sec., 59 College St., New Haven, Conn.

NEW ENGLAND DERMATOLOGICAL SOCIETY

Henry J. Perry (deceased), Pres., 19 Bay State Rd., Boston.
Wesley T. Lee, Sec., 220 Clarendon St., Boston.

NEW YORK ACADEMY OF MEDICINE, SECTION ON DERMATOLOGY AND SYPHILIS

Oscar L. Levin, Sec., 5 E. 53d Street, New York City.
Fred Wise, Chairman, 24 W. 59th Street, New York City.

MINNESOTA DERMATOLOGICAL SOCIETY

Paul O'Leary, Pres., Rochester, Minn.
D. D. Turnacliff, Sec., Yeates Bldg., Minneapolis.

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Robert H. Davis, Pres., Missouri Bldg., St. Louis.
Norman Tobias, Sec., 516 Metropolitan Bldg., St. Louis.

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Ralph A. Perkins, Sec., 276 Erskine St., Detroit.

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John H. Stokes, Pres., 3800 Chestnut St., Philadelphia.
Carroll S. Wright, Sec., 1402 Spruce St., Philadelphia.

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H. H. Hazen, President, 1912 R St., N. W., Washington, D. C.
H. M. Robinson, Secretary, 405 N. Charles St., Baltimore.

BROOKLYN DERMATOLOGICAL SOCIETY

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CINCINNATI DERMATOLOGICAL SOCIETY

August Ravogli, Pres., Doctors' Bldg., Cincinnati.
H. Jerry Lavender, Sec., 715 Provident Bank Bldg., Cincinnati.

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Italian Dermatological Society.
Danish Dermatological Society.
La Société Française de Dermatologie et de Syphiligraphie.
Section on Dermatology, Royal Society of Medicine.
British Association of Dermatology and Syphilis.
Berlin Dermatological Society.
Cologne Dermatological Society.
German Dermatological Society in Czechoslovakia Republic.
Vienna Dermatological Society.
Munich Dermatological Society.
Deutsche Dermatologische Gesellschaft.

DR. H. L. KEIM ACCEPTS APPOINTMENT IN PEKING, CHINA

Dr. Harther L. Keim, Assistant Professor of Dermatology and Syphilology of the University of Michigan, has accepted an associate professorship and will conduct the Department of Dermatology and Syphilis at the Union Medical College at Peking, China, for one year, beginning Sept. 1, 1926.

Abstracts from Current Literature

Electrothermic Coagulation: Its Indications and Limitations. H. L. Northrop, Am. J. Electroth. & Radiol. **43**:127 (April) 1925.

This is a discussion of this subject chiefly in its application to the surgical type of malignancies. The technic is given, and six illustrative cases are cited.

Pruritus Ani. M. A. Lyons, Am. J. Electroth. & Radiol. **43**:139 (April) 1925.

An account is given of a method of treatment combining the roentgen ray and ionic medication. The roentgen rays are employed in fractional dosage of unfiltered rays, not more than one skin unit being given in three weeks. The ionic medication is carried out with a galvanic current of from 5 to 10 milliamperes for from fifteen to forty-five minutes. A 6 per cent silver nitrate solution is used for the positive pole, which is inserted into the anal canal and a 20 per cent Lugol's solution for the negative pole, which is applied to the lumbar region.

A Radiometric Investigation of the Germicidal Action of Ultraviolet Radiation. W. W. Coblentz and H. R. Fulton, Am. J. Electroth. & Radiol. **43**:251 (July) 1925.

This is an abstract of a scientific study by the U. S. Bureau of Standards and the Bureau of Plant Industry. It was shown that ultraviolet radiation possessed germicidal action throughout the spectral range, but that the shortest rays had the most violent lethal action.

The Therapeutics of Light. W. E. Dixon, Am. J. Elethroth. & Radiol. **43**:363 (Oct.) 1925.

The eruptions of hydroavacciniforme and summer prurigo are attributed to the action of light rays on a substance such as hematoporphyrin, which has the property of fluorescence. The fluorescence of the skin surface in these diseases and in lupus erythematosus and some eczemas is regarded as a protective phenomenon. The presence of cholesterol, which becomes yellow after prolonged exposure to ultraviolet rays, is thought to be a factor in skin pigmentation, and the antirachitic effect of these rays is attributed to the activation of the cholesterol in the superficial layer of the skin.

Light and Some of Its Spectral Components in Therapeutics. F. C. Balderrey, Am. J. Electroth. & Radiol. **43**:439 (Dec.) 1925.

The therapeutic action of various forms of light energy is attributed to biologic rather than to germicidal action. Cutaneous tuberculosis was found more responsive to the carbon arc light than to ultraviolet light. The healing of indolent ulcers by ultraviolet light is attributed to irritant action similar to that resulting from the use of chemicals.

H. R. Foerster, Milwaukee.

Wassermann-Fast Syphilitics Treated with Bismuth. L. K. McCafferty and J. A. MacGregor, Am. J. M. Sc. **170**:22 (July) 1925.

In a series of twenty-five selected Wassermann-fast cases, bismuth was used to determine the effect on the reaction. The patients had all had one or more courses of arsphenamine and mercury without affecting the Wassermann reaction.

Sixteen injections of potassium and sodium tartrobismuthate in a period of eight weeks constituted a course, the Wassermann test being taken a month later.

Eleven of the twenty-five cases were negative or nearly so after one course of treatment, nine were unchanged, five were slightly improved. After three courses the percentage of improvement or negative Wassermann reactions was 64.7, unchanged 22.96 per cent, reversion to stronger reactions 13.8 per cent.

They believe bismuth has a definite place in the treatment of all Wassermann-fast syphilitic patients, as it is practically painless and not harmful when properly administered.

THE WASSERMANN REACTION IN THE BLOOD AND SPINAL FLUID IN PARETIC NEUROSYPHILIS. W. C. MENNINGER and K. A. MENNINGER, Am. J. M. Sc. **170**:27 (July) 1925.

Of one hundred and fifty-four cases of clinical paresis, 90.1 per cent had a positive blood Wassermann reaction, the spinal fluid being positive in 94.8 per cent. In the cases in which the Wassermann test was made on both blood and spinal fluid, 86.7 per cent were positive in both, 3.4 per cent showed a positive blood and a negative spinal fluid while 7.6 per cent gave a negative blood test and a positive spinal fluid test.

THREE CASES OF TULAREMIA, ONE RESEMBLING SPOROTRICHOSIS. F. C. HODGES, Am. J. M. Sc. **170**:57 (July) 1925.

Three cases of tularemia contracted from infected rabbits are reported, the first case closely resembling sporotrichosis, which is also found there (West Virginia). The method of onset was similar to that of sporotrichosis, but agglutination tests for *Bacterium tularense* were positive; cultures and inoculation tests were negative.

FURTHER STUDIES OF CEREBROSPINAL FLUID IN INFANTS AND YOUNG CHILDREN. S. M. MCLEAN and F. H. VON HOFE, Am. J. M. Sc. **170**:82 (July) 1925.

In the syphilitic congenitally infected cases, it was noted that the central nervous system may be involved without showing any increase in the number of spinal fluid cells. Dextrose was present in normal amounts in almost all cases, while in syphilitic meningitis there is a reduction in dextrose comparable to that noted in other types of meningitis with high cell counts.

A TINTOMETER FOR THE ANALYSIS OF THE COLOR OF THE SKIN. L. G. ROUNTREE and G. E. BROWN, Am. J. M. Sc. **170**:341 (Sept.) 1925.

This instrument consists of a number of color scales, each composed of ten plaques representing a progressive increase in color, and are taken from reproductions of 100 normal and pathologic subjects. It is hoped that the instrument will aid in more accurately defining skin color.

OBSERVATIONS ON NONPOSTCICATRICIAL KELOID, WITH REPORT OF A CASE. G. L. WALDBOTT, Am. J. M. Sc. **170**:420 (Sept.) 1925.

A case of Henoch's purpura followed by the development of keloids is reported in which the keloids were observed while developing on the site of purpuric lesions in which pigmentary changes were still demonstrable. The lesions healed completely with fibrolysin.

The suggestion is advanced that these idiopathic cases of keloid might be due to pigmentary deposits or anomalies — this patient also having a nevus pigmentosus which might have a slight causal relationship — and that further studies of keloid might be aided by an investigation of the patients' pigmentary disturbances.

SKIN CAPILLARIES IN SCLERODERMA. G. E. BROWN and P. A. O'LEARY, Arch. Int. Med. **36**:73 (July) 1925.

The ten cases studied were divided into two groups: (1) true diffuse scleroderma with a quantitative deficiency of capillary loops which roughly paralleled the trophic changes; (2) the vasomotor type, the skin disturbances apparently being secondary to the vasomotor reactions.

The authors consider the latter group apparently true Raynaud's disease, causing confusion with scleroderma only when advanced changes have taken place.

JAMIESON, Detroit.

END-RESULTS OF RADIUM TREATMENT OF SKIN CANCER. E. M. DALAND, J. A. M. A. **86**:471 (Feb. 13) 1926.

This report comprises 265 cases, of which 203 have been followed for three years or more. Radium emanation tubes were used exclusively, the kind and amount of treatment varying with the individual conditions. The end-results of treatment of the early cases was 81 per cent of cures by radium and 3 per cent by operation following radium treatment. Moderately advanced cases show 38.4 per cent of cases cured by radium and 10 per cent by radium and operation. None of the patients with advanced cases were cured by radium alone.

Whenever there is a possibility of necrosis of cartilage from irradiation, excision should be performed. This applies chiefly to the ears and to a lesser extent to the upper lids and to the nose.

Palliation and relief from pain may be given in some cases in which cure is out of the question.

A METHOD OF SURGICAL DIATHERMY OR ENDOTHERMY, RENDERING IT PAINLESS WITHOUT AN ANESTHETIC. S. TOUSEY, J. A. M. A. **86**:527 (Feb. 20) 1926.

The basis of the method lies on the shunting of the electric current from the deeper parts by means of a metal forceps which embraces the pedicle in pedunculated growths or pinches up the tissue in flat lesions.

Thus, according to Tousey, the current and heat do not affect the sensory nerve terminals. By this means he has been enabled to remove painlessly warts, moles and other surface lesions as well as to do deeper electrocoagulation.

ERYSIPELOID AND SWINE ERYSIPELAS IN MAN: A CLINICAL AND BACTERIOLOGIC REVIEW; SWINE ERYSIPELAS IN THE UNITED STATES. J. V. KLAUDER, J. A. M. A. **86**:536 (Feb. 20) 1926.

The author reviews the literature of erysipeloid and swine erysipelas, and includes some personal studies on the former disease and related disorders.

He has had the opportunity to study a number of cases of erysipeloid among fisherman. In these cases, the symptoms differed from the classical type in

the suppuration and greater severity. Swine erysipelas has been noted in this country, but so far no case in man has been recorded, though in Europe a number of cases are on record. Bacteriologic studies apparently confirm the identity of the offending organisms in erysipeloid and swine erysipelas, as well as mouse sepsis.

Klauder records two cases of mild erysipelas-like nature, one involving the arm, and the other the face, which lacked some of the features of erysipeloid and yet suggest that disease.

CHANCROIDAL ULCERS TREATED LOCALLY WITH ANTIMONY AND POTASSIUM TARTRATE SOLUTIONS: REPORT OF EIGHT CASES. E. RUPEL, J. A. M. A. **86**:544 (Feb. 20) 1926.

The author records satisfactory experience by the use of a 0.5 per cent solution of antimony and potassium tartrate. In the strength employed the remedy has mild escharotic and germicidal properties.

A NEW BIOPSY KNIFE. E. A. DUPIN, J. A. M. A. **86**:749 (March 13) 1926.

The knife is curved on the flat and has a double cutting edge. It is inserted into the growth and turned in a circle so that a coneshaped piece of tissue is excised.

MICHAEL, Houston, Texas.

THE REACTION OF THE SKIN OF PERSONS HAVING ECZEMA TO COCCI AND THEIR TOXINS. F. M. PETER, Dermat. Wchnschr. **80**:502 (April 4) 1926.

The author attempted to demonstrate the hypersensitization of the skin of patients having eczema by placing on areas of normal skin cocci (and their toxins) recovered from these eczemas. *Staphylococcus pyogenes-albus* was the strain usually recovered from the eczematous vesicles. Control patients, that is, patients having some other disease than eczema, were used. The author concluded that an artificial dermatitis can be evoked on the normal skin of persons with eczema by placing on that normal skin cocci or their toxins originally recovered from the same patient. The toxins produced the stronger reactions. He explained this by the production of allergy and a secondary sensitization of the skin. No reaction was obtained on the controls.

AN UNUSUAL ANGIOKERATOMA OF THE TONGUE. W. RICHTER, Dermat. Wchnschr. **80**:574 (April 18) 1925.

Richter reports on a case of a walnut sized angiokeratoma of the under surface of the tongue on its anterior third. Pain, redness and swelling were markedly increased several days prior to menstruation. The tumor was excised, and the clinical diagnosis was confirmed by the microscope.

STOVARSOL. PAUL BEUTL, Dermat. Wchnschr. **80**:582 (April 18) 1925.

The author publishes his experiments using this drug in syphilis. In seven cases with primary lesions as yet untreated locally or generally, it was necessary to stop using stovarsol in two cases because of its inefficiency. In one case after six days (5 Gm. of stovarsol) medication spirochetes could still be found and the appearance of the sore was unchanged. One injection of bismuth gave a negative spirochete finding, and the sore began to heal. In a

second case, after twenty-two days (22 Gm. of stovarsol) the sore was unchanged, but rapid healing took place after two injections of bismuth. Four other primary sores showed beginning healing after a few days medication of stovarsol. After two or three days, no spirochetes could be found in these lesions.

Two patients with untreated gummas of the skin who had positive Wassermann reactions were given this drug. After 20 Gm. the lesions healed leaving superficial pigmented scars, but the Wassermann reaction was still positive after four months.

Patients with secondary syphilis treated with stovarsol (16 to 25 Gm.) showed a negative Wassermann reaction two to three months after the end of this course, but the blood usually became positive later. All the author's patients supported this treatment well; there was no skin eruption, no diarrhea, no changes in the urine, etc. He recommends it in cases in which arsphenamine cannot be given, but advises against its use as a prophylactic by the laity.

A Clinical and Histologic Study of an Unusual Case of the Juvenile Form of Acanthosis Nigricans Resulting in Benign Fibromatosis. Hodara and Behdjet (Levin), Dermat. Wchnschr. **80**:609 (April 25) 1925.

The disease began at the age of 3, involving chiefly, the umbilicus, anal and perianal regions, the buttocks and back. Three years later, six large, soft, benign but deeply situated fibromas developed on the acanthosis lesions. In the next sixteen years the tumors were operated on twice, but the original six tumors recurred. No lenticular spots or melanodermas were ever present, but on the skin covering the summit of the tumors there is an occasional patch of acanthosis nigricans. These plaques under the microscope show the typical changes of acanthosis nigricans hyperpigmentation of the rete cells and a papillomatous proliferation of the corium. The tumor tissue itself is of a coarse fibrous nature, very poor in cellular elements, and is seen to arise from beneath the corium. The tumor never penetrates the cutis proper, and there is no tendency to pedicle formation. Numerous large comedones are found in certain regions of the skin covering the tumors.

McCarthy, Washington, D. C.

Moderately Deep Roentgenotherapy. J. Belot, Acta radiol. **4**:513 (Dec.) 1925.

The author, roentgenologist at the Hospital Saint Louis, Paris, defines as "moderately deep" therapy that employing voltages between 75,000 and 120,000 or having a spark gap equivalent of 6 in. to 10 in. He expresses a preference for the voltage equivalent of an 8.8 in. spark gap, that giving a better "out-put" with a Coolidge tube. When using the higher of these voltages in dermatologic cases, he usually employs aluminum filters of from 0.1 to 0.3 mm. thickness and a dosage of one-half to one skin unit (2 to 4 Holzknecht). In the treatment of acne he uses 0.5 to 1 mm. aluminum filter and for epitheliomas he employs 2 to 3 skin units (10 to 15 Holzknecht) of unfiltered roentgen rays, preceded by curettage, or, if curettage is not resorted to, a filtered dose. The observations are based on twenty years' experience.

H. R. Foerster, Milwaukee.

DERMATOLOGIC ABSTRACTS

The Journal of the American Medical Association

So-Called Acrodynia or Erythredema (Swift's Disease). S. B. Wolbach and P. R. Howe, Arch. Path. **1**:64 (Jan.) 1926.

Two clinically typical cases of "acrodynia" or "erythredema" which came to necropsy are reported by Warthin. The essential pathologic changes in these two cases were: extreme edema and slight meningeal irritation of the central nervous system, chronic erythema of the skin with hyperkeratosis, hypertrophy of the epidermis and sweat glands, with slight pigmentation of the rete, occurring in children of the hypoplastic lymphatic constitution, with associated or terminal respiratory infections and gastro-intestinal catarrh and inanition. These two cases do not support the theory of a polyneuritis as the essential feature of the disease; neither do they justify the use of the term "erythredema" as a fitting designation, as they showed no edema of the corium. They do not present any evidence as to a specific infectious etiology; they likewise show no relationship between tonsillar disease and the syndrome. *The changes in the skin and central nervous system suggested the pathologic change of the early erythema stage of pellagra.* The changes in the skin are also identical with those seen in certain forms of light sensitization xeroderma and fagopyrism. They are also identical with certain stages of roentgen ray and ultraviolet ray erythemas. The entire anatomic picture in these two cases suggests either a food deficiency or a toxic state action on persons of the hypoplastic constitution, affecting the reticulo-endothelial system of meninges and skin, the vegetative nervous system and possibly leading to a light sensitization.

Case of Morbilliform and Bullous Eruption with Jaundice from Phenobarbital (Luminal) in Choreic Child. F. P. Weber, Brit. J. Child. Dis. **22**:280 (Oct.-Dec.) 1925.

One gram every day for fourteen days was all the phenobarbital Weber's patient had taken. Nevertheless, she developed a very severe rash on the face and body. The girl did not feel ill, in spite of the fact that she was almost completely covered from head to foot with a florid morbilliform eruption (slightly purpuric in parts), the face, about the eyes, nose and lips, being especially affected. In addition there were numerous bullae. The most striking feature of the case was that the unbroken bullae contained a deep ochre yellow serous fluid, and the macerated epidermis constituting the wall of the collapsed bullae was similarly stained. The sclerotics were not markedly jaundiced, but the serous content of the bullae was found to give a strongly positive biphasic van den Bergh reaction for bilirubin; the indirect reaction was stronger than the direct reaction. These symptoms persisted for about three weeks. Copious desquamation took place.

Society Transactions

CHICAGO DERMATOLOGICAL SOCIETY

Regular Meeting, Nov. 25, 1925

ERWIN P. ZEISLER, M.D., *Presiding*

A UNIQUE CASE OF RETICULAR PIGMENTATION OF THE SKIN WITH ATROPHY. Presented by DR. ENGMAN.

J. L., a man, aged 22, with no occupation, was first observed thirteen years ago, when he was 9 years old, and had a peculiar condition of the mouth which consisted of an ulcer on the left side of the tongue and a spot of leukoplakia on the right side of the tongue. This had existed for some months without obvious cause. No disturbance of the cutaneous surface was then noted. A brother, four years younger, had spots of leukoplakia on each side of the tongue. These spots in both patients were about 2 cm. long and 1 cm. wide on the lateral border of the tongue. The bacteriologic examination threw no light on the condition. The patient was not seen again until November, 1925, when he was in Barnes Hospital for an ulcer of the leg. At that time the peculiar condition of the skin was noticed. The whole case was unusual in the color of the pigment and its distribution. The color was nearest to a gunmetal tint, bluish-purplish gray, and was generally distributed over the body. When closely examined with the magnifying glass it could be seen that the pigment consisted of a peculiar reticular arrangement. There was a small white spot 1 mm. in diameter surrounded by pigment. The whitish spot did not seem to be always follicular. All the pigmentation of the skin was composed of a minute white spot surrounded by pigment. The pigmentation was deepest on the abdomen and ran markedly in a reticular distribution. The arrangement was absolutely symmetrical and in places like that of a nevus. There were scattered irregularly over the body, particularly about the neck and face, large unpigmented and atrophic areas, ranging in size from 0.5 cm. to 3 cm. in length and 1 cm. wide and oval in outline. The patient said that they were the sites of former abrasions or infections. On the legs were large atrophic areas which were the sites of abrasions. The hands looked like those of acrodermatitis chronica atrophicans. The skin was atrophic, and the nails had disappeared. The same condition was observed on the feet. The skin of the scrotum and penis was mildly inflammatory, crusted and presented atrophic areas. The patient had lost his eyelashes, and the lids were somewhat everted and inflamed. There was undoubtedly some atrophy of the skin of the face, and it had the appearance of a mild form of xeroderma pigmentosum without freckles, black spots or keratosis. The mucous membrane of the tongue and cheeks presented whitened areas of leukoplakia.

The patient enjoyed the best of health. The physical and chemical examinations presented negative findings. The urine contained no bile pigments, alkapton bodies or melanin. The patient was normal on every diagnostic test. The abdomen showed no evidence of tumor formation on several roentgen-ray examinations.

The patient's brother was similarly affected but in a milder manner. He was four years younger, and his condition was not so advanced as this

patient's. On thorough hospital examination he showed no evidence of abnormality except the skin and mouth condition.

Histologically the picture was unique and interesting. The epidermis was thin and succulent from excessive serum. The rete pegs were flattened out, and in some places the epidermis consisted of only a few cells. The derma was edematous, the lymph spaces wide open and the elastic tissue normal, but the collagen took the stain abnormally and in the upper part was granular. All the derma down to the level of the sweat ducts was full of pigment cells containing a granular brown pigment which was iron-free. The sweat and sebaceous glands and ducts were normal. No diagnosis had been made of the condition.

DISCUSSION

DR. SENEAR: Last month in Cleveland, Dr. Cole presented a boy, aged 16 or 18, who had an identical type of pigmentation, but it was limited to a scarflike distribution around the neck. He had a dystrophy of the nails which was not exactly like this, in that there was considerable keratosis, which suggested tinea unguium, but no organisms were found. He had an ulcer on the tongue which resembled an acute radium or roentgen-ray reaction. Dr. Cole had seen the boy some months before with the same lesions on the tongue and the condition had not changed. The patient was unaware of the lesion of the tongue. With the appearance of the disorder in two members of the family of Dr. Engman's patient and the history in the patient of Dr. Cole, I would look on it as a congenital condition.

DR. PUSEY: When Dr. Senear spoke it reminded me of a case I have seen during the last few years. The patient had a pigmented area around the neck with punctate white mottling, which I think is a congenital peculiarity. I cannot reconcile myself entirely that this situation is a congenital one. The fact that the patient's brother is developing the same condition is highly suggestive of a congenital defect, but not absolutely conclusive. It looks to me as if this case belongs in the same group of pigmentary disorders as acanthosis nigricans. The loss of the nails is not a part of the picture of acanthosis nigricans, but the other conditions suggest this rather than some congenital defect in the skin. I should say that it was a unique case of pigmentary disturbance, probably analogous to acanthosis nigricans.

DR. GOECKERMAN: To me it seemed to be a disturbance in development, particularly as the brother is developing a similar picture. I would like to know when in his development this might have occurred, whether it was a germ plasm disturbance, or whether the disturbance occurred some time during fetal life. I think the large group of developmental disturbances one sees reported in the literature shows that we get an enormous variety of pictures, and that any disturbance may occur at almost any time in the development of the embryo, often not becoming evident until much later in life.

DR. WILE: My mind turns more or less in the same way Dr. Pusey's does. I cannot see that it is a developmental defect. The character of the pigment and its general distribution makes me wonder whether there is not some malignant change in this boy which is developing slowly, possibly an abdominal neoplasm involving the kidney and suprarenal, in spite of the fact that it has not yet manifested itself. We have seen many instances in which skin changes indicative of malignant disease have preceded by many years the internal manifestations. I think the case is unique in the form of pigmentation and worthy of report in the *Ikonographia.*

DR. PUSEY: I had in mind to say something about the possibility of an abdominal tumor in the case, for I think the patient is not well, and the prognosis not good. He shows some atrophic changes in the skin, particularly about the face.

DR. ORMSBY: I was struck by the large amount and good quality of the hair the young man had. In view of the marked changes in the rest of the epidermis, the pigmentary disturbance and the abnormal nails, it was striking that the hair was apparently unaffected.

DR. FINNERUD: The acquired melanosis of Riehl, judging from moulages and colored illustrations, on first glance is somewhat similar to this, but occurs chiefly on exposed areas. On close inspection, however, the pigmentation and depigmentation are seen clinically to be in opposite arrangement in these two disorders. Microscopically, in Riehl's melanosis the pigment is seen to be between the papillary and subpapillary layers, as in this case. That type of melanosis was seen only in soldiers who were poorly supplied with food, and who apparently developed certain metabolic disorders which made them hypersensitive to light.

DR. ENGMAN: This case was of such interest to us in St. Louis and the diagnosis and proper understanding of the condition was so undecided that I brought the patient to Chicago for the observation of the members of the Society.

The whole process seems to consist of a pigmentary deposit in the mucous membrane of the mouth and skin. This pigment, whatever may be its source or cause, mildly irritates the skin and renders it nonresistant to trauma and infection. I believe the changes in the nails and mouth and the inflammatory condition of the scrotum and penis are all due to this peculiar deposit of pigment. It certainly is not a case of xeroderma pigmentosum or epidermolysis bullosa. One would think of acanthosis nigricans but its color is different, the distribution of the pigment is unique, and there is no associated acanthosis. Later we hope to make a report of the complete study of the two patients.

SUPERFICIAL EPITHELIOMATOSIS WITH METASTASES. Presented by DR. ORMSBY.

The patient was again presented to demonstrate an interesting chain of events. (For description of the lesions as exhibited ten months ago, see ARCH. DERMAT. & SYPH. **12**:144 [July] 1925). The ten variously sized plaques present when last shown had been practically cleared up with radiotherapy and freezing with carbon dioxide snow, with the exception of the large one situated on the right shoulder. A biopsy from the vegetating lesion in the center of this patch showed marked dyskeratotic changes. Sections taken from other lesions developing in the different plaques showed some of the characteristics of prickle cell epithelioma. There were metastatic growths in the axilla and upper chest cavity, and the arm, forearm and hand were swollen, edematous and painful. Portions of the plaque on the shoulder were healed, while others still showed erythematous, crusted lesions, closely resembling the picture seen in extramammary Paget's disease.

DISCUSSION

DR. ORMSBY: The patient was presented again on account of unusual developments since his previous presentation. He has a large metastatic carcinoma in the axilla and internal metastases. The original superficial epitheliomatosis is of twenty-four years' duration, and it is interesting to see

a nodule develop in the center of such a patch in such a case and then metastases develop from this lesion.

DR. ENGMAN: The unique thing about this case is the appearance of squamous cell cancer in the midst of the condition which might be called Paget's disease. I do not believe this is such a rare occurrence, as it seems to me, from my study and observation of cancer for many years, that in a case of Paget's disease or any basal cell epithelioma when irritation has existed for several years, that this irritation might stimulate the so-called prickle or squamous cell carcinoma. The process we call cancer is undoubtdly a natural biologic reaction to irritation of various forms. I do not say this case is not unique; it is extremely interesting from every standpoint; yet I believe that if we would examine such areas more carefully, we would not infrequently find malignancy in several types of cells, not only the basal cells but cells higher up. We would expect in certain instances a reaction from prolonged irritation.

Burrows, working at the Skin and Cancer Hospital, has, I believe, demonstrated a unique and possibly basic or fundamental theory of cancer, and that is that cancer is the result of stasis and the incomplete supply of blood in a certain group of cells, the ultimate malignancy or atavistic proliferation being due to a stimulus which is naturally formed by the cells and carried off, but becomes concentrated through the poor lymph circulation produced by the chronic inflammation.

DR. WILE: I think the case is an extraordinary example of mutation of cell type. The sections I saw were a beautiful demonstration of the nuclear division one usually associates with a basal cell growth. To have mutation take place under one's eyes and a squamous cell growth develop after all this time makes it a unique case.

DR. FINNERUD: An interesting thing is that all the sections show amitosis as well as indirect cellular division.

LUPUS ERYTHEMATODES. Presented by DR. BEESON.

A woman, aged 35, presented skin lesions of about two year's duration. She had undergone an operation for tuberculous glands about thirteen years before. The lesions were present on the nose and both cheeks; they also involved the lips, but not the oral mucosa. On the skin were numerous small areas of central atrophic scarring with a border covered with tacklike adherent scales. The lips were somewhat swollen and everted and bluish red. Their mucosa showed atrophy, and they were covered with adherent crusts. At first the lips were so thick that considerable fissuring, with bleeding, was noted. The lesions improved considerably under the local use of carbon-dioxide snow.

DISCUSSION

DR. FINNERUD: I thought the heavy crusting of the lesions was interesting. Typical lesions of lupus erythematosus of the lips can be entirely hidden and their characteristics completely lost by crusting. When the crust is removed, the pathognomonic changes are evident.

A CASE FOR DIAGNOSIS. Presented by DR. OLIVER.

A physician, aged 38, had had an eruption on the face and some lesions on the back for four or five months. He said that four or five years ago he treated a mole on the chin with the actual cautery. When presented there

were a number of pinhead to pea-sized macular, dusky brown lesions on the face and back, with little elevation, which were not the seat of any subjective sensations.

DISCUSSION

DR. HARRY R. FOERSTER: The lesions impressed me as lightly pigmented moles of nonmalignant type. I do not think that there is any relationship between these lesions and the one which was destroyed some years ago. Several of the lesions showed scaling but no inflammation.

DR. GOECKERMANN: I tried rather hard to make a lichen planus out of the condition, but I agree with Dr. Foerster that the lesions are simply multiple pigmented moles, having nothing to do with the original lesion the patient described.

DR. PUSEY: I thought the lesions were beginning senile freckles. They have come on in the last few years, and moles do not begin in a person 35 to 38 years old. I think they have nothing to do with the lesion which was removed from the chin.

DR. OLIVER: When I first saw the patient he came in with his wife, who had psoriasis. He showed me his lesions and stated that about four years ago he had had a pigmented mole on his chin, and he wondered whether there was any possibility of a carcinomatous change.

MULTIPLE BENIGN PLAQUES OF TONGUE. Presented by DR. MITCHELL.

A man, aged 42, first had an eruption on the tongue two months prior to coming under observation. The second attack began forty-eight hours before the present demonstration. The patient was first seen twenty-four hours before, and at that time there were two lesions on the lateral anterior margin of the tongue which had since coalesced to form the present area occupying the anterior half of the dorsum.

DISCUSSION

DR. OLIVER: I have never seen a case of this type progress as rapidly as this one. I think it is a case of transitory, benign plaques of the tongue and believe it will clear up. I saw a patient three days ago with a lesion the size of a dime, and today it had enlarged to almost the size of a silver dollar.

DR. WILE: The man looked to me as though he might have a pernicious anemia. He was very yellow, and so often the initial changes occur in the mouth in just this form that I think it would be interesting to examine his blood to determine whether he has any form of primary anemia.

DR. MITCHELL: I saw the man yesterday just before leaving the office. At that time he had two coalescing lesions near the tip, and the rest of the tongue was furry. I had great difficulty in getting him to come here for fear he "would catch something." He said that he had an attack two months ago which did the same thing, and then entirely cleared up. The change covers practically the whole tongue, and this is quite unlike pernicious anemia; but I will make careful investigation to determine that point. I believe his color today was largely due to fright. I have a man under observation whom I have seen repeatedly with plaques which develop within twenty-four hours and disappear in three or four days.

PARAPSORIASIS WITH LEUKEMIA. Presented by DR. ORMSBY.

This patient was presented before the Society on Feb. 18, 1925 (ARCH. DERMAT. & SYPH. **12**:563 [Oct.] 1925). During the intervening nine months little change had occurred in the skin, although the lesions that were then present were somewhat improved and the glandular enlargement had been reduced. The blood findings were practically identical with those reported at that time, namely: small lymphocytes, 70 per cent; large lymphocytes, 17 per cent; polymorphonuclears, 13 per cent. The patient's general health was normal.

DISCUSSION

DR. WILE: I believe we are very soon coming to the point where we must take out from the benign group of parapsoriases the so-called en plaque forms. I have come to regard every case of parapsoriasis en plaque as potentially serious. Many of them, it is true, remain stationary. So many, however, have been found, as in this case, to be the cutaneous manifestations of leukemias and still others to be the forerunner of granuloma fungoides, that I believe they may all be regarded with suspicion. I personally can see absolutely no real relation between the disseminated plaque form of so-called parapsoriasis and the guttate type or pityriasis lichenoides chronica. It appears to me that there is much justification for separating these diseases as in no way related.

DR. LIEBERTHAL: I share to a large extent the views of Dr. Wile. In a case of mycosis fungoides which I demonstrated before the Society a short time ago, the patient suffered from a scaly affection of the skin for many years before the tumors appeared. The scaly eruption resembled closely the lichenoid type of parapsoriasis.

DR. ORMSBY: I have two other cases identical with this clinically but with no blood changes as yet. This patient was under observation for five years before any alteration of the blood was revealed.

DR. FINNERUD: Having recently reviewed the various types of eruption, specific and toxic, which might occur in connection with the lymphadenoses, I have become impressed with the fact that one must always suspect them, just as one must always be on guard for dermatitis medicamentosa and dermatitis factitia.

DR. PUSEY: I think we overwork "leukemia" a little bit. These "aleukemic leukemias" are crowding it a little hard. I believe we should look for leukemic changes, but sometimes I have felt that it was a cloak for perplexity.

ACRODERMATITIS CHRONICA ATROPHICANS WITH SCLERODERMA. Presented by DR. BEESON.

A woman, aged 68, presented skin lesions that had existed for a number of years with considerable itching. They were limited to the lower legs and the back of the left hand. They were a mixture of atrophic and erythematous lesions. Over both feet were a number of narrow bands of scleroderma. The atrophy was marked over the knees. A thorough medical examination disclosed nothing unusual.

DISCUSSION

DR. FINNERUD: I think exactly the same changes were illustrated in the case of a girl of 18 or 20 years of age who was presented by Dr. Ormsby last spring.

DR. HARRY R. FOERSTER: I consider it to be a case of acrodermatitis chronica atrophicans, in rather an early stage, showing a sclerodermatous type of infiltration about the ankles and outer borders of the tibiae.

DR. PUSEY: I agree with the diagnosis of acrodermatitis atrophicans, but I do not like the name. The woman has a characteristic picture over the arms. She is an old woman, the disorder has been present for years and is a degenerative senile atrophy. I think the old name of "idiopathic atrophy of the skin" is a better name than this. We see the condition occur without any accompanying condition, and I think the name "acrodermatitis" is not necessary. It is predicating that it is a dermatitis, which it is not always, and it is taking a new name for an old condition — like trying to change the name of the River Jordan.

ARGYRIA. Presented by DR. ORMSBY.

A man, aged 42, had had a generalized pigmentation for three and a half years. The skin of the face, hands and neck was most markedly involved, but some discoloration existed on other areas. The mucous membranes also showed some involvement. The patient had received injections of sodium thiosulphate, with little, if any, effect on the disorder.

DISCUSSION

DR. ORMSBY: This patient was shown to call attention to treatment. He is being treated with sodium thiosulphate and seems to be improving slightly. Methenamine has been efficacious in some localized cases, but no reports are available on its use in the generalized types.

DR. STILLIANS: We tried sodium thiosulphate for quite a while in our case in good sized doses, without any result. The patient painted a strip of paper to match the color of her face as closely as possible. I took photographs with this as a control and could not see any improvement. Then we changed and used methenamine intravenously in good sized doses every other day, being careful not to overdo it, and the patient and her friends were convinced that she had improved; but I could not be sure from control photographs that there was any difference. She had had to discontinue treatment because of an exacerbation of her old stomach trouble.

DR. ZEISLER: When in Atlantic City recently I saw two cases on the board walk, which I recognized in passing. I wonder if the disorder is not becoming more frequent.

LICHEN PLANUS ATROPHICUS ET SCLEROSUS. Presented by DR. OLIVER.

A woman, aged 40, exhibited lesions of six months' duration, which had first appeared on the wrists and dorsal surfaces of the hands. There was slight itching. The lesions were pinhead to small pea-sized white papules, flat topped and slightly glistening. In some of them could be seen a comedone-like plug. The lesions were grouped in small areas on the flexor surfaces of the wrists, the sides and nape of the neck, with a few scattered ones on the dorsum of the hands.

DISCUSSION

DR. ORMSBY: The localization of the lesions was typical, and in most instances the lesions are not extensive. Last week, at the Dallas meeting of the Southern Medical Association, a case was exhibited which presented exten-

sive generalized lesions. Roentgenotherapy has been successfully employed in several instances.

DR. OLIVER: I have given this woman two one-quarter unit treatments and some mercuric protiodide internally.

DR. MITCHELL: I wonder if any one here has undertaken the treatment of lichen planus by irradiation of the spine, as used by Pautrier in the Strassburg Clinic and by Gouin at Brest? The latter gives very small doses in the interscapular area, with immediate improvement; whereas Pautrier has been giving heavily filtered, cross-fire dosage, bringing about a Herxheimer reaction. They state their dosage in the European scales, and it is difficult to translate into our own. I have treated two patients, and one of them seems to have improved markedly. The patient is very susceptible to mercury, and therefore I cannot give the deep muscular injections. I used a two-thirds erythema dose of unfiltered roentgen ray, and this patient has had only one treatment. Dr. Zeisler, Sr., obtained very good results from hydrotherapy applied along the spine.

SCLERODERMA. Presented by DR. LIEBERTHAL.

A Mexican, aged 50, noticed that his left leg started to become hard and bluish soon after an injury to the leg about two years ago. The condition was growing worse, and a few months before presentation the appearance of the right leg began to change. Also over the left tibia in front and on the sides over its lower part the skin was dark bluish brown and firm. The skin could not be folded, nor did it pit on pressure. In the center of the changed area in front was a longitudinal scar, the result of the injury. The skin of the upper part over the tibia was covered with fine branlike scales, and the foot showed signs of asphyxia. The right foot showed the same signs to a lesser degree, and fine scaling was noted over the right tibia also.

DISCUSSION

DR. HARRY R. FOERSTER: The condition impressed me as being a pronounced chronic lymphangitis with boardlike infiltration and associated pigmentation such as we occasionally see in cases of long-standing eczema rubrum, and not a scleroderma.

LICHEN SCROFULOSORUM. Presented by DR. STILLIANS.

A negro infant, aged 17, months, had a vaginal discharge at 3½ months, and left otitis media at 6 months. At 4 months she had convulsions and was given luminal, 1 grain, three times a day, for several weeks, but had received none for several months. When presented, the child had a papular eruption of about four weeks' duration on the arms and trunk. The lesions were round topped, smooth, hard papules, paler than the brown skin, with a tiny central crust capping them. They were grouped and did not itch. The Wassermann reaction was negative, and the child was otherwise apparently well.

DISCUSSION

DR. WILE: I find great difficulty in diagnosing eruptions in colored people, as I see very few negro patients. It seems to me that the lesions in this case resembled a tuberculous affair more closely than anything else, but I say this with reservation.

DR. SENEAR: I thought first of lichen scrofulosorum, but on close observation regarded it as lichen urticatus.

DR. FINNERUD: The case reminded me clinically of the one of disseminated miliary lupus in a little child that I presented several years ago. In that case the disorder occurred after measles and presented the characteristic histologic picture of that disorder, a feature not present in this one.

DR. STILLIANS: We thought of lichen scrofulosorum and lichen urticatus, but because of the tiny, smooth papules, each with a central crust we were in doubt. Recently we had another negro child with the same picture. We have not seen lichen urticans with such small, uniform, shiny papules.

ERYTHEMATOUS LUPUS. Presented by DR. ZEISLER.

The patient was a young man with a disseminated erythematous lupus of the face of six months' duration. The case was shown because of a similar patch in the buccal mucosa opposite the second upper molar on the left side.

DISCUSSION

DR. ZEISLER: I read one or two reports in the French literature regarding the treatment of lupus erythematosus with diathermy, which were very favorable. Several patients under my observation are willing to try anything. I wrote to Dr. Eller, and he stated that he had treated fifteen cases with desiccation, and in twelve the disease had recurred in situ. The patient shown today has been taking quinine and local treatments with the quartz light. He is apparently improving.

ATLANTIC DERMATOLOGICAL CONFERENCE: NEW YORK, NEW ENGLAND AND PHILADELPHIA DERMATOLOGICAL SOCIETIES

Joint Meeting, Dec. 16, 1925

A. S. CLARK, M.D., *Presiding*

GRANULOMA OF UNDETERMINED TYPE. Presented by DRS. MACKEE and WISE.

M. H. F., aged 30, born in this country, married, had a disease which began about eight years prior to presentation, appearing as an enlarged gland in the left groin. This was removed at Mount Sinai Hospital. Section revealed a type of undetermined granuloma. About three years later, hypertrophic lesions resembling dermatitis vegetans appeared in both groins and grew rapidly. The skin over the hips became bound down and sclerotic. A stricture of the rectum had been present for about two years. Section from the rectal mucosa revealed the same type of changes as those seen from the groin sections. Destructive changes of the iliac bones and of the lateral surfaces of the lumbar vertebrae were revealed by the roentgenographic examination. There was temporary improvement of the lesions under administration of potassium iodide and of arsphenamine. Tests made for tuberculosis, actinomycosis, blastomycosis, sporotrichosis, granuloma pudenda, etc., were consistently negative. The patient was receiving filtered roentgen-ray therapy and intravenous injections of sodium iodide.

DISCUSSION

DR. TOWLE, Boston: It is difficult to discuss the case without having seen the microscopic sections. I do not think that I can add anything to the discussion, although the processes were interesting to me, as I have been seeing a number of lesions suggestive of that low grade persistent type of infection in which the resistance of the organism was low. This case seems to belong to that class. The ordinary granuloma seen in that region is usually associated with a breaking down of the tissues and a much more acute dermatitis.

DR. WEIDMAN, Philadelphia: When I first saw the lesion I thought of an atypical lymphangioma circumscriptum, but the patient did not give the right history — no erysipelas-like exacerbations, traumatism, etc. The sections show that most of the tissue concerned is highly edematous and fibrous. As to the basic processes, sections bring out little except that there is also a granulomatous change, but it is not like any of the granulomas that I know. My feeling is that the outstanding, conspicuous granular overgrowths are referable to a secondary elephantiasis-like condition. The basic agent may be an organism related to granuloma inguinale, but the conspicuous, translucent, pale appearance is not compatible with that disease, and should be referred to a secondary edema followed by a pseudo-elephantiasis.

DR. C. MORTON SMITH, Boston: The case is clinically very much like one that was shown at the New England dermatological meeting a few months ago. Repeated biopsies on that case resulted in some definite carcinomatous tissue being found. However, the Boston case was of much longer duration, and the malignancy was secondary to the undetermined primary condition.

DR. HIGHMAN, New York: I agree substantially with what Dr. Weidman said. The case has a marked similarity to one that I reported some years ago in a woman. In any event, the basic underlying process is precisely as Dr. Weidman indicated, and is seems to me that irrespective of what the underlying condition is we will have to regard it as a simple local inflammatory process with engorgement of the cutaneous lymphatics.

ANGIOMA SERPIGINOSUM: SCHAMBERG'S DISEASE: POIKILODERMA VASCULARE ATROPHICANS (?). Presented by DR. WILLIAMS.

Miss A. E., born in the United States, aged 16, gave a negative past history. The trouble for which she was presented began eight years prior to presentation, on the legs; it had remained stationary at some points and moved at others, while vanishing from the original site. The patches varied in size from small ones about 10 mm. in diameter to large plaques, and extended from the waist to the ankle. The skin in the affected area was dry, brown and hyperkeratotic. At the periphery were minute red dots.

Biopsy section showed numerous small blood vessels in the upper corium and a longitudinal section of a blood vessel that exuded down into the deeper corium. All the vessels were surrounded by a thick connective tissue infiltration.

DISCUSSION

DR. SCHAMBERG, Philadelphia: The case is one of great interest, but I can scarcely acknowledge the paternity of this affection because of certain aberrant features connected with it as compared with the case originally described. In the first place, there is too much turgescence, i. e., markedly bluish color, etc.; ulcerations have been present — this has been attributed, perhaps properly, to traumatism; atrophy is also evident; sufficient distinct cayenne

pepper-like spots on the borders are not present. There are, however, certain similarities — a gradual extension upward from the legs, and in some of the patches a close resemblance to the dermatosis which I described. It is possible that this affection may be a varying type of the same condition, but I should not be willing to accept it as a case of the identical disease. I think it comes under the group of poikiloderma.

DR. WEIDMAN: The symmetrical distribution of this eruption is in keeping with the effects of erythema multiforme, but since it has been of such long duration it would have to be assigned to the erythema perstans variant. The patient said that she had had to take pills (possibly for constipation), but the definite history of phenolphthalein medication could not be elicited. It would be interesting if those men in New York who had been in the forefront in the studies of phenolphthalein eruption would state whether the eruption in this patient is compatible with phenolphthalein effects.

DR. JOHN E. LANE, New Haven: This case well illustrates the varied appearance that may be found in poikiloderma. The lesions on the legs are not typical, and I was uncertain of the diagnosis when I first saw them alone. The patch on the inner side of the left thigh, however, seems to me perfectly typical of moderately well developed poikiloderma. There is telangiectasia, the pigmentation and the beginning of atrophy characteristic of the disease. The small patches of atrophy are not pronounced. In the center of this large patch there is a small darker area in which the telangiectasia is much more pronounced. It is on such areas as this that slight trauma frequently causes an ulceration. As the disease progresses, the atrophy becomes more pronounced.

DR. WILLIAMS: Of the diagnoses suggested, angioma serpiginosum seemed to me the most probable, in spite of the absence of the ringed lesions and the rarity of punctae. Against the diagnosis of poikiloderma is the absence — or at least the slight degree — of atrophy after eight years' duration. However, this might well prove to be the correct diagnosis.

LUPUS ERYTHEMATOSUS. Presented by DR. J. E. LANE.

Mrs. G. H. R., a private patient, aged 43, presented lesions of lupus erythematosus on the vermilion border of the lower lip and on the buccal mucosa. There was a large patch of lupus erythematosus covering the whole width of the lower lip and extending about 1 inch below it. The whole vermilion border of the lower lip was affected, and there were lesions on the buccal mucosa on both sides along the interdental clefts.

LUPUS ERYTHEMATOSUS INVOLVING THE LIPS AND MOUTH. Presented by DR. HOWARD FOX.

Mrs. Y. N., aged 40, had suffered from the eruption for eighteen months. On the tip of the nose was a well defined, reddish, scaling, dry, nonitchy patch the size of a nickel. The entire surface of the vermilion borders of both lips were covered with moderate sized scales. Beginning near the right angle of the mouth was a narrow bank of about 1 inch in length, with a narrow lateral projection. This area was sharply defined, apparently slightly depressed, shiny and dry. The color was reddish for the greater part of its extent with whitish linear streaks at the end of the patch farthest from the angles of the mouth. With the exception of this lesion on the nose, there were no cutaneous manifestations.

PEMPHIGUS OR DERMATITIS HERPETIFORMIS. Presented by DR. WHITEHOUSE.

Mrs. G., a Jewess, aged 59, married, was first seen by Dr. Whitehouse on March, 13, 1923, with a history of a bullous eruption of three days' duration, beginning on the hands and spreading to the feet and head, accompanied by intense itching. The first examination showed vesiculobullous dermatitis, most marked on the hands and feet, with some scattered isolated vesicles on the forearms. One lesion between the left thumb and forefinger was the size of a marble. Smaller vesicles arose from healthy skin like lesions of pemphigus. The mouth and throat were then free. During the following week, more blisters appeared. At the patient's request, she was admitted to Mount Sinai Hospital where, after remaining for from seven to ten days, a diagnosis of pemphigus was made, and thereupon she was sent home. Dr. Whitehouse then saw her on March 21, 1923. The condition had spread rapidly; there were lesions in the mouth, fauces, trachea, esophagus, vagina and on the vulva. Her urine was scanty, her breathing labored; she was in great pain—her condition apparently serious, resembling a true pemphigus. Arsenic in ascending doses, diuretin and local remedies were administered during this period.

On April 11, 1923, there were still blisters in groups, but the mouth, esophagus, trachea and vulva were healed.

On April 18, 1923, the skin was practically clear, when diarrhea, nausea, vomiting and general weakness set in, together with pains in the chest and dulness and râles on the left side. The temperature was 101 F.; the pulse was full. These symptoms continued for several days, then abated gradually. But as her somatic symptoms improved, hysteria appeared. She refused nourishment by mouth or rectum.

On April 28, 1923, a little more than six weeks after the onset of the condition, all the lesions of the mucous membrane had disappeared and the skin was clear with the exception of three old scabbed lesions on the abdomen.

She reported to the office on Dec. 14, 1925, that she had been perfectly well up to date (two and three-quarters years). Her weight was 198½ pounds (90 Kg.). Occasional itching of the hands and feet was the only sequela. Pemphigus cured?

PEMPHIGUS OR DERMATITIS HERPETIFORMIS. Presented by DR. WHITEHOUSE.

Mrs. Mollie O., a Jewess, aged 48, who had no children, presented a bullous eruption which began on the scalp in August, 1923, later involving the mouth and body. On Oct. 29, 1923, she became a patient at the New York Skin and Cancer Hospital, the records showing that the condition then resembled dermatitis herpetiformis. A few weeks later, however (November 21), her whole body was covered with bullae arising from a nonerythematous base. She was weak and very sick. Nikolsky's sign was elicited. The diagnosis of pemphigus was made, and she was referred to Bellevue Hospital.

On Feb. 18, 1924, the patient was seen for the first time by Dr. Whitehouse at her home, where she had been in bed for several weeks. Her throat and mouth were then free. There were denuded areas all over her body and limbs, with some vesicles and bullae. On March 21, 1924, itching was marked. There were grouped scabbed lesions all over the body, face, scalp and limbs. Nikolsky's sign was not present. The picture presented was that of dermatitis herpetiformis. She was admitted to the Skin and Cancer Hospital on March 25, and left on May 19, with the condition pretty well cleaned up except for lesions on the arms and legs. Gradual improvement continued. On Dec. 10, 1924, there were no blisters, but intense itching; On January 27 there were blisters

and itching on the lower extremities. In February, 1925, the blisters had disappeared, and only itching remained. This up and down course continued until July 28, 1925, when a moderate exacerbation occurred, bullae appearing in the mouth. While this attack continued, the patient was refused admission to the Skin and Cancer Hospital, as the diagnosis of dermatitis herpetiformis was questioned. From August until the time of presentation the improvement continued. The itching had subsided. There was considerable arsenical pigmentation present, but no eruption. The patient felt well and strong on her last visit to the office, Dec. 4, 1925.

The treatment consisted of: (1) arsenic in various forms, (2) coagulin injections twice weekly while in the hospital — sixty or more, (3) alkalis, (4) protein-free diet, (5) mild lotions and salves locally.

DISCUSSION ON CASES OF PEMPHIGUS OR DERMATITIS HERPETIFORMIS

DR. HIGHMAN: Was the patient presented to show the effect of therapy?

DR. WHITEHOUSE: Yes. I presented the two cases with the double purpose of bringing out, first, a discussion on pemphigus and, second, to show that one need not despair of curing pemphigus, at least temporarily. Both cleared up under treatment; both had been diagnosed as pemphigus; one patient was sent to Mount Sinai Hospital, and the case was there diagnosed and discharged as pemphigus, and the other was diagnosed as pemphigus at the New York Skin and Cancer Hospital. In both cases the outstanding symptom was itching. I would like the discussion to center somewhat on what constitutes pemphigus. Here are two patients that we know had these attacks, and yet the condition cleared up. Was the diagnosis of pemphigus wrong? Do we not know how to diagnose pemphigus? One patient has remained nearly three years without a symptom, and the other has only recently been cured, but the itching was the outstanding feature in both cases; Nikolski's sign was present in one — the one with the pigmentation, the one that most resembled dermatitis herpetiformis. One patient is healthy looking now, but was given only three weeks to live, and the patient with the pigmented case only six weeks. We all know that pemphigus will clear up in certain cases, and that the patient subsequently will die in a relapse, but I am not in accord with views that have been expressed and are on record that any case of pemphigus that is cured was presumably wrongly diagnosed.

DR. TOWLE: We are getting into a blind alley. The cases under discussion present doubts but nothing positive on which to base a judgment. Therefore it might be well to search for further data. I would suggest that the patient be examined for basal metabolism, renal function and the possibility of some focus of toxic absorption. As the external data are insufficient to explain the etiology, it is not only possible but probable that internal conditions are the chief etiologic factor. Should that be true, then of course the bullous eruption would be considered the external manifestation of an internal condition.

DR. HIGHMAN: I can only repeat Dr. Towle's question: What is pemphigus? I do not see how a definition can be given. The disease starts in so many ways — sometimes running a short course and at other times a long one, with periods of remission. If the periods of remission are extended, one feels that the patient may be cured, even if one is sceptical of the cure. I think the point of view that Dr. Towle took in discussing the woman's tongue, namely, that one cannot make a diagnosis of pemphigus on restricted lesions, is true in one sense of the word, not in another. Whether or not she has pemphigus,

time will tell. It is hard to make a prophesy of what a bullous lesion means. On the other hand, to state, as Dr. Whitehouse implies, that we are dealing with a cured case of pemphigus, while possibly true, is going a little too far, for real pemphigus leads to death, sometimes in six weeks and sometimes after years. In experience with numbers of cases, this fact stands out more and more prominently. At certain stages of development, pemphigus does resemble Duhring's disease, but the fact that a patient may die with what seems to be dermatitis herpetiformis indicates pemphigus to me. Nevertheless, I think the diagnosis of pemphigus cannot always be made except in retrospect. The cases that end in death are pemphigus, and the cases that do not end in death cannot be classified.

Dr. Schamberg: All those who have had experience with pemphigus must recognize that the racial feature plays an important part in predisposition to the disease. In Philadelphia it is our experience that Jews born in the East — Russian, Roumania, Poland, Galicia, etc. — who come to this country and develop pemphigus, almost invariably die. During the past five years, I have seen about twenty such cases, and all of them were fatal. On the other hand, when we see pemphigus in the American-born, it runs in many cases a milder course, and these patients have a better opportunity of getting well. We remember the cases reported a year or so ago by Dr. Wende, who employed the Davis treatment, with a high percentage of recoveries. If we compare these results with the general results obtained by us in Philadelphia — and I understand also in New York — we must come to the conclusion that we are dealing with either two different types of disease, which might be called pemphigus ferox and pemphigus mitus, or else that the power of resistance of our patients to the infection is markedly different. We must bear this fact in mind in the discussion of therapeutic results and in considering the prognosis. From the standpoint of diagnosis, there are many cases that are difficult to differentiate as between pemphigus and dermatitis herpetiformis. Some cases that appear to be the latter finally eventuate in pemphigus. I should like to ask the members here whether they have observed any cases of dermatitis herpetiformis with severe and persistent lesions of the mucous membranes, particularly of the mouth. I have a patient with an extensive bullous eruption, with marked involvement of the mouth and of the eyes. Under the use of heroic doses of arsenic injected intramuscularly and likewise injections of coagulin, the woman's skin has almost cleared up, but the mucous membrane lesions persist. We had previously used the iron cacodylate and coagulin over a long period without material results. If you will read Duhring's latest article in the splendid book which he started but did not finish, you will see that he makes no mention of mucous membrane lesions in dermatitis herpetiformis. The two cured patients shown by Dr. Whitehouse gave a history of mucous membrane lesions.

Dr. Bechet, New York: I was most interested in Dr. Schamberg's remark about the occurrence of cases of pemphigus in persons from the near East, for in the last two or three years I have presented three cases which ended fatally — all three patients were Russian Jews. The question of whether one is dealing with a mild or a severe case is only a relative one, and in my opinion impossible to determine. In two of the three recent fatal cases there were only two or three small bullae, confined to the mouth, for two years before a severe generalized pemphigus manifested itself, ending fatally after a few months. On the other hand, I recall a case seen in consultation with Dr. Throne in which the diagnosis of pemphigus had been made in several dermatologic clinics and agreed

to by both of us. This patient had all the characteristic signs of a pemphigus ferox, and she seemed doomed to an early death, yet to my intense astonishment she entirely recovered after massive doses of arsenic, and has remained well ever since. With these experiences in mind, I greatly hesitate to express an opinion as to the ultimate behavior of a pemphigoid attack.

DR. SWARTZ, Boston: I had a case of dermatitis herpetiformis that later developed into pemphigus and showed lesions in the mouth. Is there any relation between the two? Are there certain types of pemphigus that begin as dermatitis herpetiformis, or resemble it, and then become typical pemphigus?

A CASE FOR DIAGNOSIS: WOOLLY HAIR OF SCALP. Presented by DRS. MACKEE and WISE.

M. H., a girl, aged 5, was born in New York. Since birth her hair had been woolly, like that seen in Australian aborigines. The hair on the sides had always been straight. The mother and father and their ancestors, as far back as they knew, were all born in Alerp, Syria. There was never any colored blood in the family tree, as far as the patient's mother knew.

DISCUSSION

DR. WEIDMAN: This could be cited as an abbreviated case of mosaic inheritance, in the fullest expression of which an anomaly of pigmentation occurs in plaques more or less like a mosaic. In this patient, it is probably atavistic in addition — the anomaly concerns the hair instead of the pigment alone, such as is usually referred to in connection with mosaic inheritance.

SYMMETRICAL GANGRENE OF FEET IN GENERALIZED ARTERIOSCLEROSIS, WITH PRIME HEALING AFTER A UNILATERAL SYMPATHECTOMY. Presented by DR. CLARK.

Mr. E. McG., aged 66, born in Ireland, had had an ulcer on the right lower leg ten years prior to presentation. This had healed up once or twice and broken out again when he stopped using a bandage. A year and a half prior to presentation, after a caustic application to a keratotic condition over the outer sides of the heads of both 5 inch metatarsal bones, an ulcer developed which spread rapidly until first seen three months later, when there was a gangrenous ulceration covered with adherent black moist crusts, occupying the entire instep from the base of the toes to the bend of the ankles and extending down on the sides of the feet to the edge of the soles. His Wassermann test was negative, and during a period of six months this lesion at times spread at the edges and at times seemed stationary. The patient was bedridden, and every effort failed to influence the course of this gangrenous process, including extensive courses of mixed treatment, alpine sun light, and various local applications, dry and moist.

After consultation with a surgeon at the hospital, it was decided to attempt a sympathectomy of the femoral arteries. At the first attempt to perform such an operation on the left leg, the artery was found to be so brittle that it literally broke apart, with extensive hemorrhage, leaving the patient in a rather serious condition. The artery was ligated, and a hurried resection was made of about an inch and a half of the vessel, and the patient was put back to bed. It was remarkable that very little disturbance of circulation of that leg resulted from the ligation of the femoral, due undoubtedly to the collateral circulation that had already been established, and it was still more remarkable that immediately both ulcerations began promptly to clear up, the black adherent slough

to separate rapidly, and the ulceration to assume healthy healing granulations and edges. At the end of two weeks, the ulceration had cleaned and healed to such an extent that it was deemed possible to make a skin graft which took very well, and the patient was discharged in four weeks, completely healed. The lesions remained healed up to the time of presentation, even though the patient had worked as a night watchman, with the exception of a small ulceration near the outer edge of the old lesion on the left foot, due undoubtedly to chafing from a shoe and the lack of using grease and oil as advised.

When first seen, both feet were pallid, cold, and the toes swollen and with marked loss of sensation. On the night of the operation, the patient slept well for the first time in a long period without an opiate, and since then both feet have been normally warm and comfortable.

A remarkable part of the result of this operation was the effect on the right leg, on which no effort was made to perform a sympathectomy; it healed just as rapidly as did the lesion on the left leg where the artery was ligated and excised.

DISCUSSION

Dr. Swartz: Has combined diathermy and quartz lamp therapy been tried in the case? I know of a similar case which responded to that method of treatment.

A Case for Diagnosis: Circinate Lesions on Chin. Presented by Dr. Howard Fox.

C. V., aged 40, born in Italy, a tailor, had suffered from the eruption for three months. It consisted of several annular lesions on the cutaneous surface of the lower lip and chin. The borders were narrow, elevated, soft, devoid of scales, and approximately of normal flesh color. They averaged about one-quarter inch in diameter. There was no evidence of itching. The patient gave no history of syphilis, but the Wassermann test was strongly positive.

DISCUSSION

Dr. Williams, New York: I am informed by my associate Dr. Traub, that this patient was seen by him at the Post-Graduate Hospital clinic but disappeared before a thorough study could be made. However, a specimen of his blood showed a four plus Wassermann reaction. A biopsy was performed, securing from the chin a lesion of the same type as those nearer the lip, but of more recent origin, and four pathologists reported that this lesion was carcinoma. It must be confessed that the lesions now seen do not suggest either syphilis or carcinoma.

Dr. Weidman: The condition looks like granuloma annulare. Two patients have been shown lately at the Philadelphia Society, from the Jefferson Clinic, who had ringed eruptions of the face, and in both of them the section from a biopsy showed a granulomatous appearance not quite like Boeck's sarcoid. One of these patients was exhibited at the meeting of this conference in Philadelphia last year; Dr. Gilchrist saw the condition and thought it was epithelioma, but a second lot of better prepared sections proved that it was not epithelioma but in the granulomatous class. I think this may be the same thing — of a granulomatous nature, perhaps analogous to granuloma annulare.

Dr. Highman: I think the patient has simply scars of old syphilis on the chin.

DR. TOWLE: Have any of the gentlemen thought of the character of the man in whom the lesions occur? I have seen lesions resembling this resulting from a poor razor and a dirty man. I would consider that as the etiology. It looked like a lesion that had been continually irritated and stimulated.

DR. C. M. SMITH, Boston: The man had a positive Wassermann reaction; I should like to see what the effect would be of treating him thoroughly with arsphenamine, mercury, iodide of potash. I believe the positive Wassermann test is more than a coincidence.

DR. HOWARD FOX: I saw the patient two days ago for the first time. We were all at sea concerning the diagnosis. Tuberculosis, syphilis, Bowen's precancerous dermatitis and scar tissue were all suggested. The Wassermann test has just been reported as positive, and it is understood that the patient has previously received several injections of neo-arsphenamine without beneficial effect on the eruption.

LUPUS ERYTHEMATOSUS DISSEMINATUS, WITH EXTENSION OF THE DISEASE AFTER EXPOSURE TO ACTINIC LIGHT. Presented by DR. BECHET.

J. K., aged 54, from Dr. Aitken's service, stated that the eruption first appeared on the face and neck one year previously. When first seen, he had several large scaly plaques over the face and upper neck. These plaques were covered with adherent scales, with here and there hyperkeratotic follicular plugs. The chest and arms were entirely free and absolutely normal. He had inadvertantly received a single treatment with the air cooled quartz lamp, the chest and upper arms being left unprotected. A marked erythema ensued, which immediately assumed the characteristics of a disseminate lupus erythematosus, and since then the lesions had spread to the hands. In spite of some cough, a physical examination of the chest was negative. Roentgen-ray examination of the lungs showed a bilateral peribronchial thickening.

DISCUSSION

DR. OLIVER, Boston: In this case the eruption spread rapidly after exposure to ultraviolet light. The etiology of lupus erythematosus is obscure. A good many cases of lupus erythematosus begin after severe sunburn. What part the light rays play in the etiology of some of these cases is an interesting question.

DR. WEIDMAN: I have seen the same thing in syphilis. On the fourth of July the patient had a chancre. His work was to take care of ponies on the beach at Atlantic City, and when the secondary eruption came but two months later it was present almost exclusively on the sunburned parts of his chest and shoulders, which had not been protected by his bathing jersey.

DR. BECHET: Dr. Oliver brought out the reason for the presentation of the case. Usual examples of disseminated lupus erythematosus are not sufficiently infrequent to warrant presentation to a gathering of this character, but a sudden fulminating outbreak of the eruption in previously healthy skin after actinic exposure is of interest. This observation is not confined to disseminate lupus erythematosus, as I have occasionally seen the same phenomena in psoriasis and even in secondary syphilis.

LICHEN PLANUS OF THE MOUTH AND PALM. Presented by DR. SCHWARTZ.

S. W., a married woman, aged 48, appeared at the Cornell skin clinic on Oct. 16, 1925, with an eczematoid eruption of the pubic region and groins of

about six months' duration. She complained of itching. The skin at that time also showed follicular pustules. This condition improved under soothing applications and antiseptics. A week prior to presentation she presented on the left palm a large pea-sized, round lesion with a clear center and distinct elevated papular wall. Near this main lesion there was also a smaller one. The mucous membrane of the mouth presented discrete grayish papules and annular patches and irregular plaques. The urine examination showed no abnormal findings. The blood sugar was 0.1 per cent.

GRANULOMA INGUINALE TREATED WITH VACCINE. Presented by DR. KINGSBURY.

H. B., a negro, aged 32, was born in Georgia but had lived in New York for the last six years. He had been married twice, having two children by his first wife and none by his second. There was no history of miscarriage, and he maintained that neither one of his wives ever showed lesions similar to his. He said that he had not had gonorrheal infection, but he gave a history of having had a chancre and of receiving some antisyphilitic treatment more than two years before. About one and a half years prior to presentation, the patient noticed a small lump in the right inguinal region that appeared about three weeks after extramarital intercourse. This increased in size, the skin over it became eroded, and soon there was a great deal of foul-smelling discharge. The lesion began to spread along Poupart's ligament down the inner side of the thigh, and in several months reached the size shown. A month after the inguinal lesion had developed, he began to have pain in the penis and developed an ulcer on its dorsum. Four months after the onset, he came to the Metropolitan Hospital. Here antisyphilitic treatment was given without benefit, but after several months of treatment with tartar emetic he was discharged as cured.

He was admitted to the City Hospital on Nov. 18, 1925, having a recurrence of his granuloma, in the original area of two and a half months' duration. He then presented a chronic granulomatous lesion which extended along the whole of the right inguinal region, continued along the inner side of the right thigh, and involved the cleft between the thigh and perineum, and along the perineum itself almost down to the anal margin. The scrotum in contact was involved, so that there was a continuous lesion on the thigh, cleft, and scrotum. It was characterized by a sour fetid odor and easily bleeding granulations which extended above the skin level for about 2.5 cm. The margin of the lesion was firm and covered with a bluish epithelium. Unlike most cases of granuloma, the patient complained of pain in the lesion, especially along the inner side of the thigh.

The tip of the corona of the penis was barely visible because of the collar of adherent edematous and indurated foreskin which could not be retracted. On the dorsum of this mass of tissue was an irregularly oval shallow ulceration with serrated margins, having the characteristics of the larger lesion. The inguinal nodes on the left side were not enlarged.

Scrapings from the lesion showed *Bacillus venereogranulomatis*. The skin test for venereal granuloma was also positive. (Details of this test will be found in a paper by M. Goldzieher and S. M. Peck, shortly to be published.) The Wassermann test was negative.

The patient was treated with subcutaneous and intracutaneous injections of a *Bacillus venereogranulomatis* vaccine containing 100,000,000 to the cubic centimeter, in conjunction with a few doses of tartar emetic. The vaccine used in the treatment of this case was prepared from a culture of *Bacillus venereo-*

granulomatis isolated by Goldzieher and Peck from previous cases of venereo-granuloma, and the treatment was carried out in conjunction with Dr. Peck. The treatment was begun Nov. 21, 1925, and injections were given every other day. The amount was increased by 0.1 cc. at each injection until a maximum of 1 cc. was given. The patient received in all thirteen injections of vaccine over a period of thirty days. During his course of vaccine treatment he received 25 cc. of a 1 per cent solution of tartar emetic, consisting of 5 cc. intravenous injections. The patient's temperature reaction and local allergic manifestations in the lesion were used as a guide in the vaccine treatment.

Due to the previous tartar emetic therapy which he had received at another hospital, the patient's veins were thrombosed so that intravenous medication was difficult. After the first five injections of vaccine the pain and exudation in the lesion subsided markedly, and at the end of the first ten days of treatment the lesion in the right inguinal region was quite dry. The lesion continued to heal, and on Dec. 22, 1925, there was complete epithelization of the inguinal lesion, and the portion of the ulceration between thigh and scrotum which had been quite deep was completely filled up. As a prophylactic, although the lesion had healed, he was given two more subcutaneous injections of vaccine and two 5 cc. intravenous tartar emetic injections before being discharged.

DISCUSSION

DR. STOKES: If I understood correctly, the man is suffering from a relapse and is now being treated with vaccines, apparently with good therapeutic results. I do not see any mention made of the use of the new antimony compounds which Randall of Philadelphia has been using in the treatment of granuloma inguinale. It is possible that you could give very much larger doses with less toxic effect.

DR. C. G. LANE, Boston: At the Massachusetts General Hospital last spring we had a case of granuloma inguinale in which the clinical diagnosis was confirmed by Professor Strong of the School of Tropical Medicine. Diagnosis could not be confirmed microscopically. Under the usual injections of tartar emetic, some healing took place, but the patient had some reactions, and at Dr. Strong's suggestion we used a newer antimony preparation. This was the antimony thioglycollate, and we used fairly strong balsam of Peru ointment. This was followed by a marked increase in the rate of healing. The lesion was extensive at the time, and yielded faster under this treatment than under the previous treatment.

DR. HOWARD FOX: In a case which I showed before the New York Dermatological Society, the eruption cleared up entirely under the roentgen rays alone.

DR. STOKES: In some cases treated to a standstill with antimony potassium tartrate, the use of radium helped. One case which did not clear up responded promptly to radium applied in doses sufficient to produce a sharp reaction.

POIKILODERMA ATROPHICANS VASCULARE OR MAJOCCHI'S DISEASE (?). Presented by DR. MACKEE and DR. WISE.

Henry G., an American, aged 17, came to the Vanderbilt Clinic, July 30, 1923, with lesions on the upper left extremity and groins, which had been present for the past ten years. He presented marked reticular livedo on the extremities. The backs of the arms and the lower lumbar region extending down the buttocks, thighs and legs, right groin, inner side of the left thigh and calves showed areas of pigmentation. Those were the active areas. The

skin between these plaques, which were palm-sized and larger, appeared to be depigmented. In the pigmented patches which were irregular in shape there was no purpura but pin-point to pinhead telangiectasia sparsely scattered, though forming no definite arrangement. On the outer side of the left forearm and thigh, the skin showed a slight atrophic wrinkling. The patient was not a bleeder, but gave a history of a brother bleeding profusely after a nasal operation.

DISCUSSION

DR. LANE, New Haven: I cannot express a definite opinion, but my impression is that it is not a case of poikiloderma. There is little telangiectasis that I could see, the pigmentation is uniform, and there is almost no atrophy. I am inclined to think it is Majocchi's disease.

ACNE AGMINATA. Presented by DR. HOWARD FOX.

T. F., aged 54, a carpenter, born in Italy, had suffered from the major part of the eruption for seven months. It first appeared on the chin and then on the forehead, and attained its maximum development in about four weeks. At the outset, there had been severe itching. As presented, there was no evidence of scratching.

The eruption was situated on the lower part of the forehead, the cheeks, nose, upper lip and chin. On a somewhat diffuse reddish base, there were groups of pinhead sized smooth, hemispherical, more or less shiny, reddish yellow, firm lesions. Intermingled with these were numerous pinhead sized depressed scars. At the root of the nose was an irregular, lumpy, bean-sized, yellowish, firm lesion, which had been present for two years. There had been some improvement in the eruption under treatment with ammoniated mercury ointment. The patient's parents had died at an advanced age, and he was one of eighteen children, sixteen of whom were living and well. There was no family or personal history of tuberculosis. He was well nourished and in apparent good health. The Wassermann test was negative.

DISCUSSION

DR. SCHAMBERG: I would concur in the diagnosis of acne agminata, or acnitis, the term Barthélmy gave it. I am afraid that in the literature one often finds a confusion of this disease with certain forms of tuberculids. I do not believe that acnitis is a tuberculid. The course is characteristic. It is an acute infection and develops with considerable rapidity in crops, many suppurating. Progression takes place by increase in the size and in the development of the lesions, and then a state of quiescence is reached and often spontaneous involution in less than a year, followed by considerable scarring. That is a different picture from the tuberculids. I have studied several cases fairly thoroughly, and while the histologic picture suggests tuberculosis, a thorough study by inoculations, etc., leads me to believe that it is a disease *sui generis* produced by an undiscovered organism.

A CASE FOR DIAGNOSIS: MULTIPLE SARCOMA, METASTATIC. Presented by DR. MACKEE and DR. WISE.

Mrs. Rita L., aged 47, American, about a year prior to presentation noticed tumors near a mole on the right buttock near the gluteal fold and also in the right groin. In April, 1925, she was operated on at the Memorial Hospital for three tumors in the right groin.

She presented several pea to walnut sized tumors, firm in consistency and a bluish red on the right buttock. One tumor was felt in the right popliteal space. The tumors did not increase in size and had not caused any pain. She was still receiving roentgen-ray treatments at the Memorial Hospital. A biopsy taken there confirmed the diagnosis.

LIVEDO RETICULARIS. Presented by DR. WILLIAMS.

These cases had been shown previously and were reported in the Journal of the American Medical Association, September, 1925, volume 85, page 955.

The patients were the third and fourth children of a family of seven, and were the only ones affected. The eruption began in each at about 18 months of age, appearing first on the cheeks and later on the extremities, the trunk remaining free. The children suffered from a persistent diarrhea, unaffected by change in diet and controlled only temporarily by medication. They were rather slow in learning to walk and to talk. They were emotionally unstable and were less well developed than the other members of the family. The general health was good. The eruption had hardly changed since the first visit.

DARIER'S DISEASE. Presented by DR. HOWARD FOX.

Since last presentation, the disease of L. T., aged 33 Arch. Dermat. & Syph. **3**:870 [June] 1921), had progressed considerably in extent and severity, despite all efforts at treatment. Improvement had been produced by both the roentgen ray and radium. She had not tolerated large doses of roentgen ray, however, frequently being ill for a week or two after several exposures of less than a skin unit.

ARSENICAL KERATOSIS, PIGMENTATION AND EPITHELIOMA IN A CASE OF DERMATITIS HERPETIFORMIS. Presented by DR. SCHWARTZ.

M. D., aged 35, an elevator man, was treated by his family physician for eight years. Chemical examination of a sample of the medicine revealed the presence of arsenic. The entire cutaneous surface, with the exception of the face, presented a mottling made up of pigmented areas enclosing normal skin. Groups of vesicles and papules, many of which showed scratch marks, were present on the trunk and limbs, together with a mild degree of generalized keratosis. The palms and soles showed marked keratosis and a moderate degree of hyperhidrosis. There were numerous keratotic elevations on the palmar surfaces of the fingers.

A squamous cell epithelioma which developed from a keratotic growth situated on the palmar surface of the second phalanx of the right thumb had disappeared under the administration of heavily filtered roentgen rays and radium.

The neurologic examination was entirely negative except for pain in the extremities and some diminution of sensation of glove and stocking type in the arms and legs. The blood count was normal. No arsenic was found in the urine.

TERTIARY SYPHILIS (?) TUBERCULOUS ULCERS OF LOWER LIP AND TUBERCULOSIS VERRUCOSA CUTIS ON BACK OF RIGHT HAND (?). Presented by DR. MACKEE and DR. WISE.

G. S., aged 53, born in Italy, a porter, had had lesions on the lower lip for about four weeks, and those on the back of the hand had existed for about

the same time. Two sharply cut ulcers were present on the mucous surface of the lower lip, at about the center. There was a mucopurulent discharge, with moderate pain on pressure. The lip was markedly swollen, and the cervical glands were enlarged. The tip of the tongue on both sides presented a dime-sized abraded area which was covered with a filmy discharge. Parts of these lesions were the color of the tongue and others were deeper red. There was a bluish lesion about one-quarter inch (0.6 cm.) wide on the back of the right hand showing verrucous elements and some moderate inflammation. Smears were taken from the lesion on the lip, but were negative for tuberculosis. He had a history of old syphilis. The Wassermann blood test was four plus, and all the lesions improved under two injections of mercury and two of neo-arsphenamine.

DISCUSSION

DR. SCHAMBERG: When I first saw this case I thought it was one of tuberculosis of the lip, but when I observed that the patient gave a four plus Wassermann reaction I assumed that the presenter thought it was syphilitic. I did not know that the patient had had injections of arsphenamine and mercury. The failure of the lip to heal under this treatment favors the diagnosis of tuberculosis, for this type of lesion usually heals up rapidly under treatment with arsphenamine. It is rather suggestive that two injections of arsphenamine and two of mercury failed to produce the desired effect on it.

DR. LLOYD, Boston: It does not seem as though enough time had elapsed for the tubercle bacillus to produce such destruction. So far as the rapidity of the healing is concerned, I agree with Dr. Schamberg. We have seen cases which did not progress as fast as this one under these two drugs, but which progressed much better under potassium iodide.

SCLERODERMA AND FIBROMA. Presented by DR. BECHET.

S. G., a woman, aged 53, from Dr. Aitken's service, came to the clinic five years prior to presentation, with several large areas of scleroderma on both legs. The lesions had markedly improved. One and a half years before presentation a small nodule appeared on the outer side of the left lower leg. This lesion grew perceptibly, and formed a reddened, board-like, indurated tumor about 2 inches (5.08 cm.) in diameter. It was not painful.

A biopsy was made, and the histopathologic report stated that it was a fibroma.

SCLERODERMA WITH ATROPHY, SIMULATING ACRODERMATITIS CHRONICA ATROPHICANS. Presented by DR. CLARK.

Mrs. S. L., aged 71, born in the United States, had had varicose veins in her legs for a long time previous to the condition for which she was presented.

Seven years before she began to have thickening and tightening of the skin around the ankles. This thickening and dryness of the skin seemed to spread up the legs and, after months or even a year or so, there developed in these areas an atrophy and thickening of the skin, showing the blue veins pronouncedly. Two or three years before presentation, the patient began to have a hard thick condition of the skin of her chest. These tight areas had spread, and the smaller ones had become thick and atrophic like the skin of the legs. When first seen, the patient complained of a good deal of itching unless the skin was kept thoroughly greased or oiled. Up to the time of presentation, local and constitutional treatment of various kinds had failed to give relief, except slight alleviation of the itching. Thyroid or pituitary

medication had had little or no effect on the slow, gradual spreading of the scleroderma.

The patient was shown as having a marked example of scleroderma with secondary atrophy closely resembling in its end results acrodermatitis chronica atrophicans.

SCLERODERMA OF THE BUTTOCK AND LEFT UPPER ARM RESEMBLING NODULES SEEN IN MYOSITIS OSSIFICANS. Presented by DR. MACKEE and DR. WISE (Patient of Dr. Sharpe).

Mrs. P., aged 46, had previously been shown before the Section, at which time the diagnosis of myositis ossificans was considered. Roentgenograms, however, did not show any evidence of such changes.

GRANULOMA ANNULARE. Presented by DR. MACKEE and DR. WISE.

A. B., a girl, aged 9, came to the Vanderbilt Clinic on May 11, 1925, with an eruption which had been present on the wrists for four months. On the dorsum of both wrists were annular lesions varying in size from that of a pea to that of a half dollar, with nodular borders and depressed centers. These lesions were almost the color of the skin. A biopsy confirmed the diagnosis.

GRANULOMA ANNULARE. Presented by DR. HOWARD FOX.

M. F., a girl, aged 4, had always enjoyed good health and had not suffered any of the diseases of childhood. There was neither family nor personal history of tuberculosis. The Wassermann test was negative. For the past nine weeks she had suffered from an eruption on the hands, ankle and buttock. There were four patches on the dorsal surfaces of fingers or knuckles, round or oval, with narrow, elevated, firm borders. They varied in size from three quarters of an inch (1.9 cm.) to an inch (2.5 cm.) in longest dimension. The color was slightly darker than that of the surrounding normal skin. On the right external malleolus was an ill-defined patch about 3 inches (7.5 cm.) in diameter, with a remnant of the former elevated border. This patch had largely cleared up, according to the mother's statement, under a simple boric acid liniment. Another patch, an inch in diameter, was situated on the right buttock. The eruption occasioned no subjective symptoms. The child was well nourished and the picture of health.

URTICARIA PIGMENTOSA. Presented by DR. HOWARD FOX.

L. K., a girl, aged 8, was 3 months old when the eruption appeared, the mother considering it to be measles. It had not changed appreciably since infancy. It was generalized, symmetrically situated on the neck, trunk and extremities. It was most profuse on the neck, shoulders and buttocks. The lesions varied in size from that of a pea to that of a bean, and were light brown. On friction, they became reddish but not elevated. There was no evidence of scratching. A moderate amount of dermographism was present. The child was apparently in perfect health, except for hypertrophied tonsils, on account of which she had been brought to the hospital.

URTICARIA PIGMENTOSA. Presented by DR. WISE and DR. MACKEE.

D. F., a girl aged 4½, presented a papular urticarial type of lesion on the body. This began on the abdomen about two months prior to presentation. The eruption consisted of diffuse, mottled, chamois-colored and pink papular

and macular lesions with urticarial wheals and sparsely scattered bullae. Some of the individual lesions had a color typical of xanthelasmoidea. The palms, soles, ears and face were not involved. Most of the eruption was on the trunk. There was a little on the scalp.

MYCOSIS FUNGOIDES. Presented by DR. MACKEE and DR. WISE.

R. S., a woman, aged 74, first came to the Vanderbilt Clinic on March 12, 1924, with an eruption which had been present for four years. It consisted of infiltrated, slightly raised plaques on the abdomen accompanied by severe itching. These plaques were deeply infiltrated and varied in size from that of a dime to that of a silver dollar and larger. They were reddish, and areas of healthy skin were seen between the plaques.

MYCOSIS FUNGOIDES. Presented by DR. HOWARD FOX.

V. A., an Austrian, aged 36, a chauffeur, had suffered from a dermatitis for six years. Tumors had been present for the past two years. He presented numerous sharply defined superficial, dry, scaly, round or oval patches on the neck, arms, right axilla and trunk. On the face, back of the neck, trunk, arms, and right leg were numerous hazelnut to pigeon egg sized, bright reddish, elevated tumors. Some were glistening, some were crusted, and others were undergoing involution as a result of recent treatment by roentgen ray. His general condition was excellent. The report on a histologic examination would be made later.

XANTHOMA TUBEROSUM MULTIPLEX. Presented by DR. MACKEE and DR. WISE.

I. B., a man, aged 34, unmarried, admitted to the Vanderbilt Clinic on Nov. 10, 1925, first noted small red papules on the left styloid process three years prior to presentation, since which time other lesions had appeared. There were no subjective symptoms. Two months before presentation he had jaundice, and according to his statement he showed high blood sugar. As presented, there was no sugar abnormalcy. He had lost 22 pounds (10 Kg.) during the past four months. An antidiabetic diet had not caused improvement in the lesions.

Over the extensor surface of the elbows, dorsum of wrists, knees, ankles, buttocks and adjacent portions of the thighs were numerous tumors and plaques, the plaques being formed by the coalescence of small papules. The tumors varied in size from 4 mm to 1½ and 3 inches in diameter. They were firm in consistency, freely movable under the skin, dark red to deep yellow, especially when there was tension over the elbows, and were composed of numerous globules. Numerous telangiectatic blood vessels were seen over the surface.

BULLOUS ERUPTIONS IN HEMORRHAGIC SARCOMA OF KAPOSI. Presented by DR. MACKEE and DR. WISE.

This case had been presented before, and was published in the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY, May, 1923, page 625. The bullous eruption of the right thigh was treated with roentgen rays. One skin unit (Holzknecht), filtered through 3 mm. of aluminum screen, was administered at an interval of seventeen days, resulting in a "drying up" of this part of the eruption, so that the lymph exudate definitely ceased. The other areas were being treated with one unit skin dose (Holzknecht) through 1 mm. of aluminum filter screen, once in two weeks.

MELANOSARCOMA. Presented by DR. BECHET.

A. S., an Italian woman, aged 54, came to Dr. Aitken's service giving the history that three years previously she had noticed a small nodule at the base of the middle left toe; a few months later several other nodules appeared. One year later the toe was amputated. She remained well for a year, after which she noticed a recurrence of the nodules in and around the scar. The lesions gradually increased in number, several coalescing to form a group of small reddish blue tumors, about an inch in diameter, below the base of the old amputation scar, on the plantar surface. Several nodules were also discerned on the extensor surface of the foot, adjacent to the same scar. In the left groin a large metastatic mass was palpable. The patient's general health was not affected.

MULTIPLE FLAT EPITHELIOMA OF THE FACE. Presented by DR. WISE.

Miss X., aged 51, presented numerous widespread, flat, slightly infiltrated lesions on the forehead, trunk, inner side of the thighs and left popliteal space, of thirty years' duration. The left lower eyelid was involved. A biopsy study was reported by the pathologist to be basal cell epithelioma.

RHINOSCLEROMA. Presented by DR. SCHWARTZ.

T. D., a man, aged 28, married, was admitted to the Cornell Skin Clinic on Nov. 12, 1925, with a history of having had a gradually developing swelling of the nose for three and a half years. About nine months prior to presentation a lump appeared on the left side of the nose, and about the same time another appeared above the left side of the upper lip. The nares were obstructed. The patient complained of aphonia and pain. Examination revealed an enlarged, hard, beaklike nose with a large bean sized, elevated, purplish-red, granulomatous growth on the left side. Another was present just above the lip. The throat, especially the soft palate and tonsils, was lacerated and broken down, with irregular growths and scars, and the uvula was almost entirely destroyed. On direct examination, the larynx showed considerable new tissue. The supraglottic region posteriorly showed a large flat mass of tissue, and several smaller masses. The vocal cords were barely visible. Frisch bacilli were not found in the smears. The report on the pathology of tissue removed from the larynx had not yet been received.

The patient was receiving roentgen-ray therapy.

ULERYTHEMA OPHRYOGENES. Presented by DR. WILLIAMS.

Mrs. S. C., a Russian, aged 62, presented a typical eruption on both eyebrows, which began about eight to ten years previously. The case had been shown at the Academy from Mount Sinai Hospital some two or three years previously. She also presented several nodular lesions on the legs above the shoe-tops, which had been present for about a year. The urine was negative on several examinations. The blood sugar was 150 mg. per hundred cubic centimeters. The question was as to the diagnosis of the nodes.

EPIDERMOLYSIS BULLOSA HEREDITARIA. Presented by DR. MACKEE and DR. WISE.

M. M., a boy, aged 2, came to the Vanderbilt Clinic on Aug. 3, 1925, with thickened and horny finger and toe nails which had been present since birth. He also presented on the soles a few pea-sized bullous lesions. On the extensor surface of the ankles about the knees and elbows, were numerous

grouped and raised keratotic lesions. On Dec. 10, 1925, the skin around the left thumb became swollen and red, and pus exuded from around the base of the nail on pressure. On the back of the right side of the neck in the hair line was a hard scaly patch about the size of a dime, resulting from a vesicle which burst and became infected. On the lips and around the chin were numerous broken-down vesicles.

TINEA TONSURANS IN AN ADULT. Presented by DR. BECHET.

D. T., a colored woman, aged 27, from Dr. Aitken's service, had several patches in the scalp, rounded in outline, scaly, and covered with hair stubs. Two microscopic examinations at different times demonstrated the fungus. Her son, a boy of 5, had typical tinea tonsurans.

SYNOVIAL LESIONS OF THE JOINTS. Presented by DR. WILLIAMS.

Mrs. I. B., a Russian, aged 40, had previously been shown at the November meeting of the New York Dermatological Society. The case was presented because of the unusual number of lesions of this type shown.

PARAPSORIASIS. Presented by DR. MACKEE and DR. WISE.

O. E., a clerk, aged 50, came to the Vanderbilt Clinic April 13, 1925, with an eruption on the trunk and extremities consisting of numerous fawn-colored patches varying in size from that of a dime to that of a silver dollar. No erythema was present. The blood Wassermann test was negative. The diagnosis was confirmed by biopsy. The lesions on the trunk disappeared under hypodermic injections of pilocarpine, and alpine sunlight. There were no subjective symptoms.

PARAPSORIASIS, BROCQ TYPE. Presented by DR. BECHET.

F. B., a man, aged 20, from Dr. Aitken's service, born in the United States, said that the eruption had been present for four years and that there had been no material change in appearance during that time. There were no subjective symptoms. The lesions consisted of slightly scaly, brownish-red to pale red plaques, particularly noticeable on the arms. The patches on the trunk were much smaller. They had been somewhat changed in appearance by a few treatments with the quartz lamp.

SARCOID. Presented by DR. MACKEE and DR. WISE.

A. R., a colored woman, aged 42, came to the Vanderbilt Clinic, Dec. 10, 1925, with a lesion involving the right ear and adjoining part of the cheek. It had begun two and one-half years previously on the top of the right ear, spreading down the rim of the ear and on to the cheek, becoming kidney-shaped. The periphery of the lesion was composed of deep, small pea sized, red, scaly papules. Two large pea sized, deeply infiltrated, scaly papules were observed in the center. The center of the lesion was brownish, macular and pigmented, with a few dilated capillaries. The skin was wrinkled and looked atrophic. There was a white cicatrix below the tragus. The patient was married in 1904 for five years, and a second time for five years. Her general health was good. She denied primary and secondary lesions. The Wassermann test, reported on the day of presentation, was four plus.

HYDROCYSTOMA. Presented by DR. WILLIAMS.

V. C., an Italian presser, aged 57, presented a lesion which he said began a year previously; it was situated near the inner canthus of the left eye, at a point of irritation from his glasses, and consisted of a lobulated mass about 3 by 7 mm., pale pink, and was raised about 2 mm. above the level of the skin. A clear liquid exuded after puncture.

Biopsy Report: "The section shows numerous hair follicles, sebaceous and coil glands, and a large cyst lying in an edematous stroma. There is some connective tissue reaction about these appendages. The large cyst is lined with a single layer of more or less edematous epithelium and partly filled with coagulated serum and large pale staining cells and lymphocytes. Diagnosis: Hydrocystoma."

EXTENSIVE KELOID OF THE BODY, SHOULDERS AND NECK — REMARKABLY IMPROVED BY ROENTGEN-RAY TREATMENT. Presented by DR. CLARK.

Mrs. M. McN., aged 50, born in Jamaica, first began to develop nodular lesions on the right side of her neck after marriage, twenty-five years ago. These thick nodular masses spread slowly over the back, chest, shoulders and other side of the neck, by spreading at the edges and the development of outlying nodules. When first seen, a year previously, the patient presented a most remarkable nodular, thick growth, covering most of the chest and part of the abdomen, back and shoulders, some of the lesions being ulcerated and other areas showing some contraction with deformity, and so much disability that the patient had to be taken into the hospital and put to bed.

The first clinical impression, owing to the ulceration, infiltration, and itching, was that it was a case of mycosis fungoides, but the pathologic examination showed no findings of that disease and seemed to indicate a simple keloidal growth. In places, the lesions were ½ to ¾ of an inch (1.2 to 1.9 cm.) in thickness. Since that time the patient had received half unit doses of roentgen ray to various parts of these areas at two, four and eight week intervals, a 6-inch spark gap at a distance of 8 inches for one minute with the Coolidge tube. Some of the areas had received as much as four and five units of the roentgen ray. Slowly the great majority of this massive keloidal tissue seemed to melt down to the skin level, with relief of the contractions, leaving a rather pliable, dry and greatly softened skin, so that during the past six months the patient had been able to attend to her duties as housewife and care for her family of children. At no time had she suffered from these one-half unit roentgen-ray applications, and each time they resulted in a distinct modification in the character of the keloid.

ANESTHETIC LEPROSY. Presented by DR. HOWARD FOX.

NODULAR LEPROSY. Presented by DR. HOWARD FOX.

NODULAR LEPROSY. Presented by DR. HOWARD FOX.

LEPROSY. Presented by DRS. MACKEE and WISE.

LEPROSY. Presented by DRS. MACKEE and WISE.

NEVUS LINEARIS, SIMULATING LINEAR LICHEN PLANUS. Presented by DR. BECHET.

A. W., a Russian, aged 21, from Dr. Aitken's service, said that the lesion had been present as long as he could remember. It consisted of grouped,

verrucous-like, violaceous, excoriated papules arranged in linear formation on the back of the left thigh and calf. On the calf, the linear distribution was less noticeable, the lesions being more scattered and occupying a larger area. All of the lesions were markedly excoriated and the patient complained of much itching. A biopsy demonstrated nevoid tissue.

DEMONSTRATION AND DISCUSSION ON PSORIASIS. MISS M. A. MARCUS, from the Massachusetts General Hospital, and Harvard Medical School.

The main reason for the demonstration at the present time is to get further advice for my clinical work. Thus far, I have spent two years on this work with Drs. Kolme, Schamberg, A. J. Smith, and Dr. Weidman, with whom I have studied forty-one cases. From thirty-eight of these forty-one, I have recovered a sarcinae, of 95.1 per cent. Since last July, I have continued this work with Dr. Charles J. White; during this time, I have had thirty-two cases more, from which I have recovered the same organism in the same percentage.

In addition to the sarcinae, I have isolated a filamentous organism which, with the help of the mycologists at Harvard University, was found to be an actinomyces, but not the ray fungus. It remains to be seen whether this filamentous organism bears any relation to the sarcinae. It is rather interesting to note that the sarcinae and the spores of the filamentous organism give similar staining characteristics. This organism I have succeeded in demonstrating, in culture and in tissue, to Drs. Thaxter and Dodge and Waksman, mycologists, and to Dr. Wohlbach, pathologist of Harvard University, as well as to Dr. McCallum, the pathologist of Johns Hopkins University, and to Dr. Allen J. Smith, the pathologist of the University of Pennsylvania. In ordinary cut sections, I was unable to demonstrate the organism, but fragments here and there. When I made cross (tangential) sections, I suceeded in demonstrating the organism definitely and more frequently. I have proceeded with this organism as well as with the sarcinae in making inoculations, and have succeeded in reproducing the typical psoriasis lesion. After making repeated inoculations twice a week for two months, gradually increasing the number of strains used, two or three to eight or ten, I have observed that the condition of some of the patients under treatment has cleared up and that of others is clearing up, and the patients tell me that they are feeling better and rested since receiving the inoculations. I am led to think that the organisms produced some sort of immunity. Five cases cleared up entirely with inoculations.

I would therefore appreciate any advice or suggestions that I may be given by those who may have had experience in establishing immunity with the inoculations of a filamentous organism. My inoculations consisted of the pure culture of the living organism of the sarcinae and the filamentous organism, respectively.

DISCUSSION

DR. SCHAMBERG: Miss Marcus is to be congratulated for her perseverance and care in this study. She worked with us for a while, and with Dr. Weidman in Philadelphia. Of course, the finding of a sarcina-like organism in the skin would not of itself be particularly noteworthy, but the fact that she found it in such a high percentage of cases under such rigorous conditions of antisepsis is interesting. What I was particularly interested in was the demonstration of sarcina-like bodies in the living epithelial layer, at least in one case.

As regards the effect of a vaccine made from this organism, one should draw conclusions with great care. We know that psoriasis is a capricious disease

and that vaccines of different kinds often produce astonishing results. Injections of the enterovaccine of Danysz, advocated by Sabouraud, often do well. The effect is doubtless a foreign protein effect. Before one can accept Miss Marcus' organism as causative, further proof is necessary. If she can find that by inoculating herself, for instance, she can produce psoriasis, it would be convincing evidence. I believe that the work she is seriously carrying out should be encouraged; she has worked with a persistence which is to be commended.

DR. WEIDMAN: Dr. Schamberg has expressed my own feelings about Miss Marcus' work. That she has demonstrated sarcinae in a large majority of psoriasis lesions, I am willing to accept. I *have* found sarcinae in other dermatoses — pellagra, for example — and turned over two strains to Miss Marcus for study, but she reported that they were not of the same species as her psoriasis sarcinae. I am satisfied, too, that Miss Marcus has demonstrated sarcinae in sections, but only from one patient. In that instance, the organisms lay high up in the epidermis. I may be wrong, but my personal feeling is that her demonstration would be much stronger if it could be demonstrated deeper down in the corium, where, to me, it appears that the primary focus of activity lies in psoriasis.

It is going to be difficult to fulfil Koch's postulates in connection with psoriasis, because when we attempt to reproduce lesions on known susceptible persons we will be handicapped by the knowledge that in such patients psoriasis lesions often develop along scratch marks and in the entire absence of any experimentally applied virus. The development of mycelial filaments was a surprise to me. I did not recall seeing any in Miss Marcus' work in my laboratory. However, I can vouch for it that the strands exhibited today under the microscope are fibrin elements. The reticulum definitely interlaces, and the structures at the intersections are nodal points and not the coccoid bodies of actinomyces.

We are always willing to encourage any one who is spending the time and energy that Miss Marcus is doing on such an important subject as the cause of psoriasis; however, the case is as yet very far from being demonstrated. It is no more proved than is the diplococcus which Schamberg, Kolmer and Raiziss found during their monumental work on psoriasis, nor the *Spirochaeta sporogona* psoriasis of Rasck.

MISS MARCUS: I take especial pains in stressing the existence of the filamentous organism associated with the sarcinae in psoriasis. These organisms I have repeatedly demonstrated bacteriologically in culture and in tissue. This filamentous organism I obtained from four patients last year, but I thought they were contamination. I showed a smear with some of these organisms and asked Dr. Weidman what they might be, but he could not tell and advised me to pay no attention to them. Of course I was told many a time that I was looking for too many things. I could not help that, and this year again I have recovered three more cultures of the same filamentous organism. It occurred to me that it must be more than a contamination. My knowledge of mycology is poor, and I turned for help to the mycologists at Harvard University. This organism was found to be an actinomyces, but a new species of the actinomyces group thus far described. In tissues, this organism is usually found in the corium, and therefore it should be searched for in the deepest level under the scale. After succeeding in producing the typical psoriatic lesion in psoriatic patients and in a control, I have recovered the same organism, but associated with a colony of sarcinae. In some patients,

the psoriatic lesion develops in a few days, and in others the typical lesion does not develop until three or four weeks after the inoculation of the culture. The latter phenomenon I have observed in both active and quiescent stages, and in a patient with a chronic case who had been coming to the hospital for twenty years.

With the inoculation treatment, I have observed the positive psoriatic reaction in twenty-six patients with psoriasis and only in one nonpsoriasis case. The main thing which I wish to make clear is that the organism I have recovered from psoriasis is usually obtained from the deepest level. I therefore examine three levels, each sterilized previous to making the cultures, as described under the method of study in my previous report in the *Journal of Laboratory and Clinical Medicine.*

NEW YORK ACADEMY OF MEDICINE, SECTION ON DERMATOLOGY AND SYPHILIS

Regular Meeting, Jan. 5, 1926

FRED WISE, M.D., *Chairman*

STREPTOCOCCUS INFECTION OF THE SKIN. Presented by DR. ANDREWS.

Dorothy C. (from the Department of Dermatology and Syphilology, Vanderbilt Clinic), aged 10, presented crateriform abscesses, one on the dorsum of each hand, from which a pure culture of *Streptococcus hemolyticus* was recovered. They were of three weeks' duration and began as blisters.

Replying to an inquiry from Dr. Goodman, Dr. Andrews said that no blood culture seemed warranted.

DISCUSSION

DR. POLLITZER: That *Streptococcus hemolyticus* should produce an abscess in the skin is rather an unusual thing. I have myself seen a large bleb on the wrist from which I obtained a pure culture of *Streptococcus hemolyticus,* and which cleared up quickly under wet antiseptic dressings, without any complications. There was no real ulceration, but simply a superficial lesion.

BISMUTH GINGIVITIS. Presented by DR. CHARGIN for DR. SAYER.

A. K., a woman, born in Russia, aged 30, who had been married for eight years, and had had three miscarriages and no living children, first came to Mount Sinai Clinic on Aug. 9, 1923. Her Wassermann test was four plus. She was put on mercury intramuscularly and arsphenamine intravenously. Her husband also was being treated for syphilis.

Since June, 1924, she had been receiving bismuth injections only, as her veins were too small for receiving arsphenamine. She had received forty-one injections of bismuth to date. On Dec. 22, 1925, she began to complain of pain in the gums. Examination showed a blue line on the gums of the upper middle teeth, which was still present. She had received no injections of bismuth since Dec. 15, 1925.

DISCUSSION

DR. ABRAMOWITZ: It would be interesting to know what preparation of bismuth was used, what percentage of bismuth it contained, how often it was

administered, and how many consecutive injections were given to the patient before the "bismuth line" was noted.

DR. SAYER: She received the soluble form of bismuth. She received 1 grain (0.06 Gm.) of bismuth at each injection; the injections were given at intervals of seven days.

ARSENICAL DERMATITIS. Presented by DR. CHARGIN for DR. SAYER.

L. W., aged 39, born in Germany, had been married for nine years; she had had no children and no miscarriages. She first came to the clinic at Mount Sinai Hospital on March 8, 1925, on account of loss of vision in the right eye, presenting Argyll Robertson pupils, normal fundi, and a four plus Wassermann test. She was immediately placed on antisyphilitic treatment, consisting of bismuth intramuscularly and arsphenamine intravenously. After receiving six injections of arsphenamine, she complained of fissuring and vesicular eruption of the finger tips, which was thought to be due to the arsphenamine; this was accordingly discontinued for a while, with improvement of the finger tips. Subsequent treatment with neo-arsphenamine was followed by only slight changes in the finger tips. Since the sixth injection of arsphenamine she had had an erythematous and vesicular eruption on the thighs and buttocks which was thought to be due to poison ivy as she lived in a location where it was common. Treatment with calamine and zinc lotion did not result in much improvement. Meanwhile, she had been continuing the weekly injections of neo-arsphenamine, and after having received twelve such injections the eruption on the thighs and also on the back became rather suspicious looking, resembling the vesicular type of arsenical dermatitis, and accordingly the urine was sent to the laboratory and was reported to contain arsenic in large amount. One week later she still had an eruption (vesicular) on the breasts and pigmented spots on the back and buttocks, and the laboratory reported another specimen of urine to contain appreciable quantities of arsenic. The patient had not been receiving any arsenic since Dec. 1, 1925, and the last Wassermann test was negative (Dec. 29, 1925); the eruption on the trunk and buttocks had been gradually fading.

DISCUSSION

DR. SAYER: After having received a few injections of arsphenamine, the patient appeared with an eruption on the thighs and buttocks resembling ivy poisoning, and told of walking where there was an abundance of that plant. She was treated for the eruption on that basis for three months without benefit, and finally, the poison ivy season having passed, we suspected something else. We then diagnosed the skin condition as dermatitis medicamentosa of the vesicular type, and had the urine examined in the laboratory. The report came back that a large amount of arsenic was present. Two tests showed marked traces of arsenic, and since the cessation of the arsphenamine therapy, the condition has improved considerably.

DR. PAROUNAGIAN: Dr. Chargin said that he considered it an arsphenamine dermatitis, but I would never consider it that. We have seen a great many of these arsenical dermatoses, and I have never seen anything like this. At to the condition following the administration of arsphenamine, it does not sound plausible, for if the patient were sensitized to arsenical preparations she would have shown a more severe dermatitis — possibly a dermatitis exfoliativa — and would not be able to be here. The condition is not generalized, and I am

inclined to think that there is some other drug in combination with the arsenic that causes this dermatitis.

DR. SCHEER: It seems to be a form of arsphenamine eruption belonging to the fixed type—the same type caused by phenolphthalein and antipyrine.

DR. GOODMAN: Did the patient even take Ex-lax or any other phenolphthalein purgative? The regularity of the occurrence suggests that it might have been in his preparation for the arsphenamine that the eruption came forth.

DR. CHARGIN: There was no history of such medication. I hesitate to call the eruption an arsphenamine dermatitis, but on the assurance of Dr. Sayer and the patient that the eruption becomes more pronounced and extensive soon after the administration of the arsphenamine, one must accept his diagnosis.

POIKILODERMA VASCULARE ATROPHICANS. Presented by DR. WOLF.

P. S., aged 17, born in the United States, was well until nine weeks prior to presentation, when the eruption on the posterior portion of the right leg appeared. It was confined to the lower third of the leg when first seen, four weeks later. The eruption consisted of racemose lesions, not elevated but which appeared to have depth. As presented, the lesions showed central atrophy and hemorrhagic spots at the periphery.

DISCUSSION

DR. ANDREWS: I disagree with the diagnosis. I do not see any resemblance in the skin to a roentgen-ray dermatitis. It is the typical location and appearance of erythema ab igne, and I believe that to be the diagnosis in the case. There are no purpuric spots, it is of short duration and the so-called atrophy is not impressive.

DR. ABRAMOWITZ: On close examination of the patient, I found a good many annular lesions with a suggestion of atrophy in the center. It would be rather unusual for an erythema ab igne to look like that after several weeks. Besides, the patient denied any exposure to heat in this location. I do not think it is poikiloderma vasculare; there is no resemblance to a roentgen-ray dermatitis. It may be a beginning form of Majocchi's disease.

DR. SCHEER: I agree with the remarks of Dr. Abramowitz. Of course, much depends on the question of whether or not there is atrophy in the lesion. Some of the men were unable to see the atrophy, but I thought there seemed to be a distinct atrophy in the oval lesions with telangiectatic border. Of course, that would point to Majocchi's disease. I do not think it is poikiloderma, but incline to the diagnosis of Majocchi's disease. I showed a similar case five years ago in a man with tertiary latent syphilis and lesions similar to these on the arms.

DR. WOLF: I would like to emphasize a few points. In the first place, the patient denied being exposed to any source of heat. She was questioned on various occasions, and she consistently denied any such exposure, nor could she remember any heat being applied locally. If it were erythema ab igne, one would expect to see vesiculation and crusting in the beginning, to explain the scarring. I was fortunate in seeing the patient early in the disease; it first appeared on the lower third of the extremity and has spread so that it now involves three fourths of it, and also presents an advancing border. When first seen, it had the appearance of a livedo racemosa. The lesion was level with the skin, although it had a deep feel to it, to wit, a deep infiltration which one could palpate. The fact that it does not resemble a radiodermatitis

does not exclude the diagnosis of poikiloderma. In the beginning, a radiodermatitis does not show the condition that it does three or four years later. It is the final picture that the members have in mind when they say it does not resemble a radiodermatitis. I admit that the disease is progressing rapidly and the atrophy is appearing early, even for a poikiloderma. When she was first seen, she showed no atrophy whatever; that has appeared in the last three weeks. I do not entertain the diagnosis of erythema ab igne, but the case seems to fit in with the diseases affecting the blood vessels—possibly Majocchi's or Hutchinson's disease.

FOX-FORDYCE DISEASE. Presented by DR. CHARGIN.

E. G., aged 18, a stenographer, first became aware of her trouble about five or six months prior to presentation, at which time she experienced some itching in the axillary regions. She did not know whether she had the eruption prior to the itching. As presented, the eruption was limited to the axillary spaces, with several lesions on the labia majora. The left axillary space was more affected than the right. The lesions were pinhead sized and somewhat larger, were more marked in the lower axillary spaces, and were especially brought out on stretching the skin somewhat. The skin was almost normal in color when first seen, but as a result of roentgen-ray exposure was somewhat pigmented when presented. Some of the lesions were pierced by hairs, but not the majority of them. A few of the lesions showed keratotic plugs. The general health of the patient was good.

DISCUSSION

DR. CHARGIN: It is perhaps well to call attention to the modern conception of Fox-Fordyce disease, which is now considered an affection of a special type of sweat gland and no longer a disease belonging to the group of neurodermites. Several years ago Schiefferdecker made a study of the glands found in human and mammalian skin, and as a result he demonstrated that there are two distinct types of sweat glands, which he named: (1) the ekkrine or E. gland, and (2) the apokrine or A. gland. The ekkrine glands empty directly on the skin and are characterized by a watery secretion. In the production of this secretion, the gland cells do not undergo any change in form. This type of sweat gland is present all over the body, especially on the palms and soles. The apokrine gland is always associated with a hair follicle and is present only in certain locations in the adult human being. They are found in the axillary region, on the breasts around the nipples, on the genitalia—particularly on the labia majora—around the anus, and on the abdomen in the region of the umbilicus. It is this type of A. gland that is affected in Fox-Fordyce disease. It should be noted that the secretion of the A. gland is much thicker in character and that the cell of this type of gland contribute a portion of its body to the formation of its particular secretion.

DR. SCHEER: The interesting feature of the case is the rapid response to therapy. The patient says she has received only two or three roentgen-ray exposures, and that the lesions are very much smaller than they were. That is interesting, for the disease is notorious for its resistance to all kinds of therapy, including the roentgen ray.

DR. CHARGIN: There are only about thirty cases on record, and in none of them was anything accomplished by other means than surgery. More cases have been observed, but not recorded. I believe there is not a single case on

record of a cure by the roentgen ray, and I do not regard this patient as having been improved by the few exposures given.

DR. GOODMAN: A distinction should be made between the Fox-Fordyce disease and possibly the Fox-Fordyce eruption. If we use the eponym referring to the original work of Fox and Fordyce, the cases so named should fulfil the requirements. Fox gave the clinical report of a peculiar localized papular eruption, intensely pruritic and obstinate to all forms of therapy. Fordyce gave the histologic features of the case. Certainly if the eruption does not itch, or if it is easily amenable to ordinary therapy, one should not call it Fox-Fordyce disease. A patient under my care has improved to a degree by exposure to carbon arc light, and the destruction of the papules by means of bipolar diathermy. It is a difficult task, but the relief experienced by the patient makes it worth while. I have also tried galvanism.

DR. TRAUB: I have had occasion to look up the Fox-Fordyce syndrome and found thirty-three cases reported in the literature, and I have had two of my own — one of them a man who was shown before the Section, represents the second example of this disease in a male; the other having been one of the two original cases reported by Fox and Fordyce. The fact that the disease may occur in males may have some bearing on the etiology. Itching was not a feature of the case, and yet the lesions were typical. Both patients that I treated have been improved temporarily by roentgen-ray treatment, but later reverted to their original condition. Contrary, however, to what Dr. Goodman has stated, itching is not necessarily a feature of the syndrome; in quite a number of the cases reported, itching was absent.

DR. CANNON: I have treated several patients with the roentgen rays, in two of which the patients obtained entire relief from the itching for two years. The lesions were extensive in the axillary regions and mammary glands. There has been no recurrence of the itching, so far as I know.

PRURIGO NODULARIS. Presented by DR. ABRAMOWITZ.

Mrs. J. G., a Sicilian woman, aged 60, had been under the care of Dr. S. Oleynick at St. Michael's Hospital Dispensary in Newark, N. J., and was referred by him for presentation. She had had eight children; six were alive, and two had died in infancy from croup and pneumonia. She had been well until two years prior to presentation, when she began to have an eruption. The eruption was almost exclusively limited to the extensor surfaces of the upper and lower extremities; it consisted of raised, hard, scaly and scratched nodules, varying in size from 0.5 to 1 cm. The skin in between these nodules was somewhat lichenified, with some hyperpigmented and some depigmented areas. The patient complained of severe itching. A Wassermann test taken recently was negative.

DISCUSSION

DR. OLEYNICK (Newark): I have seen the patient only a few times. According to her history, the eruption and itching began eleven or twelve years ago, beginning from the instep of one foot and gradually appearing over other parts of the body. It was always only nodular and at no time disappeared.

The itching was always severe. The patient was seen by several physicians in Italy and was treated by them, but without success. I exposed one area to filtered roentgen rays, and the patient claims to feel relieved of the itching on this particular area.

DR. SCHEER: I agree with the diagnosis although the lesions are somewhat darker; usually they are more or less the color of the normal skin. The pigmentation in this case may be due to the long period of itching and scratching. We have here another disease which is notoriously obstinate to therapy. One roentgen-ray treatment caused some improvement, but other patients who have received many exposures have not been helped. Sutton remarks that carbon dioxide snow has given more relief than any other medication.

DR. LEVIN: Clinically, the lesions are prurigo nodularis, but I would like to know more about their pathology. Some of the lesions on the right wrist suggest the possibility of lichen planus. Before starting the treatment, the case should be studied, especially as to the possibility of some blood disturbance being present, like leukemia.

DR. ABRAMOWITZ: Ever since Hardaway, in 1880, first described this condition under the title of "Multiple Tumors of the Skin Accompanied by Intense Itching," a number of cases have been reported. Various names have been attached to this disease, but prurigo nodularis seems to be the most descriptive, as it resembles prurigo in its location, is intensely itchy, and the lesions are nodular. I think Dr. Scheer is in error in calling attention to the fact that the lesions are usually of the same color as the surrounding skin. According to the age of the lesions, they are much darker and even vesicular. It is only natural, of course, that it has been confused with the hypertrophic form of lichen planus, but in this instance the location on the extensor surfaces only would naturally exclude lichen planus. As to treatment, I do not think any radical measures should be used. Cases have been described in which new lesions have developed in the same area after excision. This case should be thoroughly studied. The pathology of prurigo nodularis is not definite, except that it does not show a lichen planus structure. The blood count should be taken to exclude a leukemic condition.

DR. POLLITZER: It seems to me that this disease is due to some toxic process in the system, and that local treatment can be only palliative — which, of course, is not a bad thing — but search should be made for some systemic disorder. There is evidently some obscure noxious element in the blood which produces the condition. Its pathology must not be sought in the lesion itself, but in the system. It is in the prurigo group, which is dependent on some internal disorder, and in that direction the cure must be sought. As for the confusion between this disease and lichen planus hypertrophicus corneus, the latter may be excluded simply on the ground that there is no evidence of lichen in the form of a lichen planus papule. Furthermore, the distribution of the lesions (virtually limited to the extensor surfaces) is against lichen planus corneus.

DR. OLEYNICK: I am thankful to the chairman for his suggestions. I will observe the patient, investigate the possible cause, and will report on the case later.

ACRODERMATITIS CHRONICA ATROPHICANS AND PSORIASIS. Presented by DR. ABRAMOWITZ from the Department of Dermatology and Syphilology, Vanderbilt Clinic.

Mrs. Clara J., aged 45, was born in Russia and had been in this country for twenty-five years. She had had lesions on her legs at varying intervals for the past three years, and palmar lesions for the last eight months. As presented, there was some scaling of the scalp. The patches on the legs presented sharply limited plaques with rather fine scales, which were not altogether

typical of psoriasis. This might have been due to the location on areas on which the skin was very thin, wrinkled, and red (acrodermatitis chronica atrophicans). The anetoderma had been present on the legs and thighs for many years before the development of these psoriatic lesions. The skin of the palms was dry, showing scales more like psoriasis than the lesions on the legs. The right ring finger nail was stippled. Examination of the scales for tinea was negative.

DISCUSSION

DR. POLLITZER: Were there psoriatic lesions elsewhere than on the legs?

DR. ABRAMOWITZ: The patient has been using a mild salicylic ointment for one week. You might find such scales as she now presents in a treated psoriasis or in psoriatic eczema. The lesions on the palms rather favor the diagnosis of psoriasis.

DR. LEVIN: The occurrence of the lesions on the leg together with the scaling on the palms and the characteristic stippling of the nails seem to make the diagnosis of psoriasis correct. I believe it to be a dermatitis chronica atrophicans in a patient with psoriasis.

DR. POLLITZER: The distribution for psoriasis is extraordinary.

TUBERCULOSIS VERRUCOSA CUTIS. Presented by DR. ANDREWS.

A. M., presented a condition with a duration of seventeen years. It began on the face, and was cured by operation. Seven years later, it recurred on the right ankle and behind the right knee, for which he had received desultory alpine light treatment. The patient was to be treated by endothermy and filterered roentgen rays.

A CASE OF DERMATITIS EXFOLIATIVA FOR DIAGNOSIS OF ETIOLOGIC FACTOR. Presented by DR. MCCAFFERTY for DR. MATHIS.

The patient, a Jewish market man, aged 31, born in Southern Russia, five years prior to presentation had noticed an itching sensation beneath the chin, which extended down to the chest. This covered about two years. The itching began to spread over both arms, both legs, the trunk and finally the face and head. Scaling began at the time the itching had covered the head, which was about three and a half years subsequent to the initial itching. At the same time that the scaling occurred, the skin began to get red. Later, he noticed some thickening of the skin, and glandular enlargement in the groins and axillae. One month prior to presentation it was noted that there were deep seated bullae over both thighs and an enlarged liver with some ascites. The ascites lasted only one week. For the first year and a half, the patient had scaling, redness, itching and thickening of the skin, with occasional remissions. There were now a few pea-sized nodules on the body.

The urine was entirely negative on repeated examinations; the Wassermann test was negative; the blood chemistry was normal. The blood picture revealed: red blood cells, 5,000,000; white blood cells, 12,000; hemoglobin, 90 per cent; neutrophils, 65; small lymphocytes, 26; mononuclears, 2; transitionals, 1; mast cells 1; eosinophils, 5. A biopsy had been taken but not reported on. No arsenic had ever been taken or administered intravenously.

DISCUSSION

DR. MCCAFFERTY: The patient is apparently not ill in any way except for the annoying pruritus. Blood counts will be carried out twice a week, and he will be carefully observed for the development of a leukemia.

DR. WERTHEIMER: At the annual meeting of the Pittsburgh Dermatological Society, in May, 1925, I presented a case of exfoliative dermatitis in a negro. After suffering from the disease for about eight months, practically all the pigment of the skin had disappeared, and the picture as seen in white men was typical. As the disease progressed, the entire body became markedly edematous, and showed much scaling, redness and oozing with marked glandular enlargement. After being in the hospital for about a year, he suddenly developed pulmonary edema and died. When first seen, the blood picture suggested the possibility of leukemia — a slight lymphocytosis with an increase in the number of leukocytes. After repeated blood examinations, the leukocyte and differential counts became normal. The blood Wassermann and spinal fluid tests were negative for syphilis. Various examinations of the stomach contents, kidney tests, etc., were negative. Roentgen-ray examinations of the chest showed a few shadows at the lower part. Necropsy showed tuberculosis of the lungs and mesentery glands, myocarditis and thrombophlebitis of the left renal vein.

DR. POLLITZER: The diagnosis seems to lie between three conditions: pityriasis rubra of Hebra, which with Jadassohn we find to be frequently of tuberculous origin, leukemia and, finally, mycosis fungoides. The disease, beginning with a generalized pruritus and lasting a long time — from several months to a couple of years, and then the development of an exfoliating erythroderma with enlarged glands, and finally some nodules on the thigh — seems to rule out the pityriasis rubra of Hebra. We then have to consider mycosis fungoides and leukemia. The blood picture is practically negative. I suppose blood examinations have been made repeatedly?

ANSWER: Only twice in two weeks.

DR. POLLITZER: Of course there is the possibility in a leukemia that we have at a given time a fairly negative picture and at another time a characteristic picture, and I would suggest that blood counts be made once a week; but if we find no evidence of leukemia I think we are left with a diagnosis of mycosis fungoides with a somewhat unusual beginning — but all sorts of beginnings have developed into mycosis fungoides.

DR. CHARGIN: In my opinion, pityriasis rubra of Hebra can be ruled out. In this disease, the constitutional symptoms are more marked, the course is progressive without remissions, and as the disease continues there develop fever, diarrhea, etc., the severe cases terminating fatally. If one can rule out leukemia in this patient, mycosis fungoides in the premycotic state would fit the case best. For this diagnosis speak the enlarged glands, the marked itching and particularly the infiltration of the skin, which in areas is marked.

DR. WERTHEIMER: I should like to know whether any one has had any experience in giving intravenous injections of sodium thiosulphate, and if so, what results were obtained.

DR. POLLITZER: I repeat that this man presents too little desquamation for pityriasis rubra of Hebra. In that disease, scales are shed by the quart; that is not true in this case. On the evidence presented, I would say that the diagnosis rests between a leukemic affection and mycosis fungoides, with a probability in favor of mycosis.

DR. GOODMAN: Dr. Wise once showed a patient somewhat like this one. As I remember it, the excision of a gland cleared the diagnosis. I would venture the clinical diagnosis of one of the leukemia cutis group of diseases.

DERMATITIS EXFOLIATIVA (SECONDARY). Presented by DR. CHARGIN.

I. C., married, a tailor of Russian birth, had always been well until three years prior to presentation, at which time he developed a patch of eruption in the genitocrural region and one in the scalp. Under treatment this disappeared, but recurred several times and always yielded to treatment. About a year and a half before presentation, the eruption became more persistent and increased in amount. At that time he was seen by a dermatologist who diagnosed psoriasis, and was treated with chrysarobin, the roentgen ray and alpine sun lamp, but without any improvement. On the contrary, he seemed to become worse, and was admitted to the service of Dr. Goldenberg at Mount Sinai Hospital, in March, 1925. At that time his entire body was intensely red, and there was a great deal of flaky desquamation. The skin was dry, and there was no evidence of vesiculation. The skin was not infiltrated. The tongue seemed to take part in the process, being red and denuded of epithelium. While the patient was in the hospital he shed the nails of the hands and feet. There was no itching. The patient complained of chilliness at times.

Various types of treatment were administered, all with indifferent results. There had been a tendency, however, for the scaliness to become less marked, and recently the redness — especially on the feet and upper part of the chest — had receded somewhat.

The urine was normal; the blood Wassermann test was normal, as was also the blood chemistry, blood count and differential count.

DISCUSSION

DR. SCHEER: I saw the patient (a private case); he came in with psoriasis which involved the hands and feet and genital region; and there were scattered patches on the scalp and elsewhere. The scalp was treated with ammoniated mercury and salicylic acid, and the body with chrysarobin. I never use more than 2 per cent, more often 0.5 per cent. The patches were intensely red from the start, and the scales, instead of being micaceous, came off in large flakes. After using chrysarobin for a month without any effect on the psoriasis, new patches began to form which were different in that they did not have micaceous scales; they were also bright red. I began to have a peculiar feeling that something was going wrong, so I stopped the chrysarobin but it was probably too late. I watched him, and the patches kept on developing, some of them joining with others and forming large areas, until I realized that the patient was developing a dermatitis exfoliativa; but it took six or eight months for the process to become general. Of course, every effort was made to check it. Dr. MacKee saw the patient and all the usual examinations were made — blood count, the blood sugar test, etc., pilocarpin and also autohemotherapy, but despite all this and the careful avoidance of any irritative treatment, the process extended until the entire body was covered. He was then admitted to the hospital, and I have not seen him for eight months. The appearance now is very much what it was when he was admitted to the hospital, except that there is not so much scaling, which may be due to the fact that he has been using some grease.

We have here a case which is a warning against the use of chrysarobin or pyrogallin etc., in psoriasis. If such remedies do not cause involution in a short time and the process continues to increase in redness and scaliness, it should be stopped.

DR. POLLITZER: May I ask whether you established the diagnosis of psoriasis when you first saw him? I understood that he had typical lesions on the

fingers, the feet and the scalp. Had he any characteristic typical lesions in typically psoriatic locations? It occurred to me that he might have had something else from the start.

DR. SCHEER: He had typical psoriatic lesions. I am certain he had that and nothing else at the start.

DR. ROSTENBERG: This is an important discussion. We all see numerous cases of psoriasis treated with chrysarobin and the roentgen ray. Dermatitis exfoliativa, however, following this treatment is rare, and if any of the members have seen such cases I would like to have their impressions as to what they think it was due to. I wonder whether roentgen-ray treatment is causing more of them now than formerly occurred with chrysarobin alone. I think that perhaps the roentgen-ray was the cause of it in one of my cases; in that instance, I have a distinct impression that the use of sodium thiosulphite brought about a cure.

DR. WOLF: I do not think the medication had anything to do with it. In my service in the army I had several cases of primary dermatitis exfoliativa in psoriatic patients, developing without any medication. In my opinion, it is a complication of the disease and has nothing to do with medication. The man would probably have developed the same condition had nothing been done. It is probably a case in which the psoriasis developed quickly into an exfoliating dermatitis.

DR. GOODMAN: In 1913 or 1914 I saw a patient with psoriasis, and the man developed an exfoliative dermatitis. I saw him at odd times at one or another clinic or hospital for a number of years. On my return from the army in 1920, I saw him at one of the clinics, and he was still as red as a boiled lobster. It becomes a question, then, what can be done for a patient once the exfoliating dermatitis develops.

DR. ABRAMOWITZ: It is fair to consider dermatitis exfoliativa as a part of psoriasis, but it is a mystery why one patient should develop such a condition after psoriasis and another not, irrespective of the method of treatment used. In regard to therapy: I think that Dr. Rostenberg's suggestion should be taken up and that this man should be given small doses of sodium thiosulphite intravenously; he should also be put on a moderately restricted diet and his elimination watched carefully. I think that in time he will recover.

DR. FELDMAN: I have seen a patient who developed an extensive dermatitis exfoliativa following psoriasis. The lesions disappeared after the use of olive oil. Later, his psoriasis reappeared. He was then treated with 5 per cent ammoniated mercury ointment, and once more developed an extensive dermatitis exfoliativa, so that when he had undressed the maid had to come and sweep the floor. He has again been treated with nothing but olive oil, and his condition is now clearing up again. It is interesting to watch the psoriasis reappear as soon as a skin area is free from dermatitis. The more clear areas he had, the more psoriasis was present.

DR. POLLITZER: With regard to thiosulphite treatment, I see no reason for it. We use that drug in metallic intoxications, and there is nothing of that kind to be considered here. We are dealing in this case with an acute inflammatory condition of the skin. We all know that scaling is alleviated by oil, but it is bad for the inflammatory condition. I should put the man to bed and bury him in talcum powder, and nothing else; look after his elimination and see that he is kept on a bland and low diet and has plenty of water. My suggestion would be to keep him quiet and covered with powder — the treat-

ment suggested by Dr. White of Boston, which I have found excellent in many of the erythrodermas, even in the dermatitis following arsphenamine.

One more word in defense of chrysarobin. I have been using that drug in psoriasis for thirty-five years and have never seen a case of dermatitis exfoliativa resulting from it. I say that, because some may be led to neglect the most valuable remedy we possess in the treatment of psoriasis. Accidents happen, of course, but they are of so rare occurrence that I think we need not on that account hesitate to use chrysarobin. I never use less than 5 per cent, and occasionally 10 per cent. Of course, if it has a detrimental effect, I stop it. Sometimes the dermatitis is so severe that we have to stop, but that is rare.

Dr. Levin: I watched this patient for more than six months and have my doubts whether he had a secondary dermatitis as the result of chrysarobin. When I first saw him, he had the generalized erythema which follows psoriasis. I think it is simply a case of dermatitis exfoliativa following psoriasis. All kinds of treatment have been tried, and this patient has had all kinds of stimulating and soothing applications, soothing diets, and so on, without effect. Chrysarobin was the only drug that did him any good except coal tar. I think it is a secondary dermatitis following psoriasis. He may possibly develop mycosis fungoides.

Dr. Goodman: Sodium thiosulphite has had a vogue in the treatment of the dermatitis following arsphenamine and mercury. I have also used it in conjunction with arsphenamine as a preventive of the arsphenamine dermatitis. It occurred to me also to use sodium thiosulphite in other scaly diseases. I consulted a chemist, who thought little of the idea because he believed that the good results in arsphenamine and mercury dermatitis were due to specific chemical reactions. The suggestion that sodium thiosulphite would be of value in psoriasis was made. More recently I understand, sodium thiosulphite is being used more widely in diseases of the skin on the theory that it causes some beneficent change in the salt ratio.

Granuloma Inguinale. Presented by Dr. Abramowitz.

A. B., (from the Department of Dermatology and Syphilology, Vanderbilt Clinic), aged 28, born in the British West Indies, came to the Vanderbilt Clinic, Jan. 4, 1926. There was a sore on the penis eight months previously. A Wassermann test taken at the Harlem Hospital five months prior to presentation was four plus. The patient received seven injections of arsephenamine and one of mercury; then his prepuce was incised. He then went to the Bellevue Hospital, when another Wassermann test was made and reported positive. He received seven injections of arsphenamine and fifteen of mercury.

The patient presented a lesion involving the prepuce, running around the entire circumference, with a rolled edge and a rough granulating surface. In addition, there was an involvement of the glands around the corona and superficial ulceration. Examination for Donovan's bodies was negative. Examination for Vincent's was negative. The patient was started on tartar injections of emetic.

DISCUSSION

Dr. Cannon: I suggest the diagnosis of chancroid. It is an unusual location for granuloma inguinale and while the lesion spreads peripherally there is no healing in the center. Also, the lesion is not verrucous nor is there a serosanguineous discharge so often seen in granuloma inguinale. I believe with irrigation of the ulcer with some antiseptic solution followed by iodoform dressing that the lesion will probably heal in a short time.

DR. WOLF: I also am inclined to believe that it is a Ducrey infection and that the man should be given tartar emetic; that will clear up the diagnosis probably from the standpoint of its being a granuloma inguinale. He should have had infected inguinal glands associated with breaking down, which I believe he did not show.

MYCOSIS FUNGOIDES. Presented by DR. ABRAMOWITZ.

L. S., a private patient (from the Department of Dermatology and Syphilology, Vanderbilt Clinic), aged 31, was previously presented at the November meeting of the Brooklyn Dermatological Society. He then presented a universal eczematous eruption with many large, pea-sized, lichenified nodules, of three years' duration. There was some difference of opinion as to the pathologic diagnosis of mycosis fungoides, on account of the presence of what appeared to be an almost uniform perivascular plasma cell infiltration and thickening of the vessel walls, which were present in both of the excised nodules. The patient had received weekly one Holzknecht unit of roentgen rays to the three subdivisions of the body, from November 11 to December 16, with marked relief from itching and disappearance of all eczematization, the nodules being only faintly visible. He had also received at the beginning, injections of sodium arsenate, but these were stopped after three weeks on account of albumin, blood and casts in the urine. He had been away from treatment for three weeks.

As presented, there were still a few scattered nodular lesions, mostly noticeable on the trunk, with considerable pigmentation — probably from the roentgen rays. During this three weeks' absence the patient took one roentgen-ray treatment to the trunk and had to use the calamine liniment now only once a day, there being so little itching.

DISCUSSION

DR. FELDMAN: I saw the patient three years ago and treated him for five or six weeks. When first seen, he had an exudative eczema in the typical locations; back of the knees, arms, buttocks, over the shoulder, etc. The condition was acute, and he did not respond to treatment very well. Finally, in about four weeks, I managed to clear the condition up sufficiently to use roentgen-ray treatment, giving one sixteenth of an erythema dose over the legs and arms, and the whole condition recurred and I lost the patient. I see him here. As to mycosis fungoides, of course at that time this diagnosis would never have entered any one's mind; there was only an acute erythema, with no infiltration or scaling, or other indication to suggest it.

DR. FRASER: I can confirm what Dr. Abramowitz has said in regard to the histology of the lesions. It is well known that typical mycosis fungoides may present a variety of histologic pictures. In one group of cases which I reported in 1917, the cellular infiltration in the tumor growths was composed almost exclusively of plasma cells. The plasma cell, after all, is probably only a changed form of a lymphocyte.

DR. CANNON: Mycosis fungoides is not always fatal. I have in mind a patient who was treated several years ago. The patient had possibly 300 tumors in the course of her illness, and had a marked and extensive type of mycosis fungoides both clinically and histologically; yet all the tumors disappeared under roentgen-ray treatment followed by injections of arsphenamine. Since then she had gained about 30 pounds (13.6 Kg.) in weight and has been in

good health for a number of years. Dr. Fordyce mentioned the case in commenting on a paper read by Dr. Howard Fox.

Dr. Abramowitz: In view of Dr. Cannon's remarks, I would like to say that I had a patient about 70 years of age who had mycosis fungoides for more than seventeen years. The lesions had never progressed beyond the nodular stage. He was first under the care of Dr. George Henry Fox, who confirmed the diagnosis by a biopsy, and while under my care microscopic examination of an excised lesion also showed mycosis fungoides. The son of the patient informed me that he was still subject to periodic attacks of itchy patches, although his general condition was good. Roentgen-ray treatment after many years still caused the disappearance of all lesions as well as the pruritus.

Dr. Pollitzer: I wish that some one would put together the cured cases of mycosis fungoides. It would make an interesting record.

Lip and Genital Chancres. Presented by Drs. Parounagian and Mason.

B. P., aged 27, born in Poland, came to the Bellevue Syphilis Clinic on Dec. 31, 1925, with a large chancre of the lower lip (to the left of the median line), markedly swollen submaxillary glands on the left side, a chancre on the dorsal aspect of the prepuce, marked inguinal adenopathy and a profuse roseola. The duration of both lesions was said to be about seven weeks, and the macular eruption of about two days. He had been exposed regularly for more than three months with one woman. The dark-field examination was positive for spirochetes from both sores. A Wassermann specimen was taken on the afternoon of the day of presentation. Fournier described this condition as "chancre à distance."

Chancre of the Neck and Secondary Syphilis. Presented by Dr. Parounagian and Dr. Mason.

E. E., aged 23, born in Denmark, a counterman, was seen the day before presentation (Jan. 4, 1926), and then showed an extensive roseola, moist papules about the genitals and general adenopathy. No evidence of chancre could be detected in the genital region, but careful search revealed a circular, sharply circumscribed lesion on the left side of the neck on the trapezious muscle, about 6 inches from the external end of the clavicle. There was a bubolike swelling about 1 inch above the initial lesion. While the patient admitted frequent exposures with different women, he did not remember how long he had had this suspected chancre. He believed that his collar was responsible for it. He thought the eruption was of about three weeks' duration; the sores on the genitals appeared after his rash, and he thought the sore on the neck was there before the body eruption. Dark-field examination was positive for the neck lesion. A Wassermann test had not been reported.

DISCUSSION

Dr. Parounagian: I spent quite a little time with the patient trying to find out the mode of infection, but did not succeed. He is a man of low mentality and does not remember anything about it, but he admitted that he had had many exposures with many women.

Dr. Thornley: I have had two cases with the primary lesion in almost the identical location of Dr. Parounagian's case. One of the patients denied having been bitten. I believe that this man and the other patient I saw who

denied having been bitten, were both suffering from a primary lesion at the site of a bite.

Dr. Goodman: I recall a patient with chancre of the neck. He was quite young, perhaps 17 years of age. He had never been exposed to sexual infection. His chancre was finally traced to the manipulation of a barber who promised to remove what he called an "ingrowing" hair. The chancre developed at the site of the manipulation with what must have been contaminated pincers.

Lupus Vulgaris Erythematodes. Presented by Dr. McCafferty.

M. L., aged 58, and married, had resided in Nova Scotia until shortly before presentation. Eight years ago she developed a few pea-sized, yellowish-brown, hard tubercle-like lesions on the neck, which gradually increased in size and changed slightly in color to reddish or purplish red. Similar lesions appeared on the extensor surface of the arms, shoulders, buttocks, and on the flexor surface of the legs and on the face. The lesions were well defined from the normal skin and ended abruptly at their periphery. Most of the larger lesions were reddish purple, with slight scaling. In two of the lesions on the back, the center had undergone involution, showing a slight amount of atrophy in the skin beneath. There were several rectangular lesions half an inch in length by a quarter inch in width over the nose. The tip of the nose had developed into a lobulated mass consisting of three soft flabby lobules, giving the appearance of a rhinophyma. At the periphery of a few of the larger lesions on the arms and back were individual pea-sized, yellowish-brown, infiltrated, tubercle-like lesions, which had not taken on the reddish-brown color. There were no subjective symptoms; there had never been any ulceration.

DISCUSSION

Dr. Fraser: The clinical features do not suggest lupus vulgaris. The history of the development of the lesions, appearing as they did at an advanced age, is also against that diagnosis. The lesions on the body in their gross appearance resemble sarcoid, but Dr. McCafferty informs me that sections of these lesions examined microscopically show the histologic picture of lupus vulgaris. If the histologic picture is typical, I feel that we must accept the diagnosis as presented.

Dr. Simpson (Washington, D. C.): I do not believe that we can get a passive congestion like this from the stopping of the lymphatics; it would be more of a boggy edematous condition. In regard to the destruction of the sebaceous glands mentioned by a previous speaker, I find the contrary to be true. There are large plentiful comedones; the mouths of the glands are large, prominent and gaping, such as we see in rhinophyma. I think the condition of the nose is rhinophyma, depending on passive congestion, such as we get in tea drinkers and alcoholic persons, and that it has nothing to do with the tuberculous condition. I think the treatment will resolve itself into coagulation or knife cautery.

Dr. Pollitzer: I do not think it is a case of lupus vulgaris. In my opinion, it is sarcoid. The histologic picture — of which I hear for the first time — is in entire harmony with sarcoid — tubercles in the cutis. Against lupus vulgaris is the absence of anything like a lupus nodule; the beginning of this affection so late in life; its wide dissemination; and, finally, the appearance of the lesions and their location, predominantly on the upper part of the torso. I think we are dealing with a case of sarcoid. The rhinophyma has probably nothing to do with it.

DR. LEVIN: I agree with what Dr. Pollitzer has just said. When I first saw the patient I made a diagnosis of Darier-Roussy type of sarcoid. The patient has that type of eruption on the face, the back, the lower extremities and the buttocks. The lesions are dark purplish or brownish, are deep infiltrations, atrophic in the center, and show yellow areas. There is no hemorrhage into the lesions. There are telangiectatic vessels crossing the surface.

DR. FRASER: As there is so much difference of opinion among the members, may I suggest that Dr. McCafferty exhibit the slides, if possible, a section of the nose lesion, at our next meeting? The final diagnosis may rest with the microscopic findings.

DR. ANDREWS: I was surprised at the suggestion that it might be the Darier-Roussy type of sarcoid. It is superficial, and there is no tendency to ulceration. They seem to belong to the Boeck group.

DR. POLLITZER: The Darier-Roussy type is a subcutaneous form of sarcoid; in this case the lesions are obviously located in the cutis. In my opinion, this is the sarcoid of Boeck.

DR. CHARGIN: Some of the lesions, particularly one on the upper arm, suggests Boeck's large nodular type of sarcoid in which the patches show a central, slightly depressed, bluish-gray area and a border slightly raised and brownish. Some of the lesions in this patient, especially those on the face, suggest lupus vulgaris.

DR. LEVIN: I wish to repeat my diagnosis of the Darier-Roussy type of sarcoid. If you examine the lesions carefully and feel them, you will find that they are not superficial; they are deep. The Boeck type of sarcoid may resemble them. Boeck described two types — very small, and up to the size of a large bean, and larger, more elevated lesions. This is a distinct infiltration deep in the skin. I am positive that if examined microscopically it will show tuberculosis extending down to the hypoderm. I will try to present two patients with lesions similar to these and accepted as showing the Darier-Roussy type of sarcoid. Both these cases were presented before several of the societies and at this Section, and the diagnosis was accepted and confirmed.

DR. ELLER: I believe that this is a case of sarcoid. The patient says that the lesion on the left arm remained the same in size and color for eight years, and there are no signs of atrophy. Lupus vulgaris would have shown some changes in this length of time. I would like to study some of the slides. In reference of the rhinophyma there are two methods of procedure: one, to remove the superfluous tissue by plastic surgery and to follow this by roentgen-ray therapy in order to contract the enlarged sebaceous glands and thereby inhibit further growth. The other method is to destroy directly the nodules with the high frequency knife (so-called endotherm knife), and to follow this later by electrodesiccation to the individual glands. By either method the cosmetic result would be good.

DR. SIMPSON: It seems to me that clinically speaking there are two conditions. The round sebaceous lesion on the nose, left side, certainly looks like sarcoid. I have a similar case now under observation in Washington in which the lesion is similar in size, color and configuration. Another case of mine which Dr. Schamberg saw three or four years ago was exactly like this and was diagnosed sarcoid. But the lesion on the arm is quite different in color, is more cutaneous, and looks more like lupus vulgaris, and I do not see why we could not have the two conditions together a number of which are in the literature.

Dr. McCafferty: I have studied this case rather exhaustively for the past week from a clinical point of view. Dr. Pusey in his book gives a characteristic description with photographs of a case of lupus vulgaris erythematoides which this case resembles closely. The lesions which are present in this patient have remained unchanged for the past seven or eight years, with the exception of some involution in the center of one or two of them. In his description of the condition, he describes lesions at the periphery of the larger lesions. These smaller lesions in my case, in daylight, have the color of lupus vulgaris. The case in question closely resembles sarcoid, clinically, especially the larger lesions, yet the smaller lesions look more like lupus vulgaris in daylight than sarcoid. I will bring sections of the case to the next meeting.

Permanent Alopecia Following Roentgen-Ray Therapy. Presented by Dr. McCafferty for Dr. Mathis.

I. A. (from the U. S. Naval Hospital Brooklyn, N. Y.), aged 32, a Hebrew clerk, born in New York City, presented a condition that began with eczema of the scalp in 1918, which was treated with ointments without any definite results. In 1922, the patient had eight fractional treatments of the roentgen rays applied to the crown. The eczema cleared up but recurred later. In 1924, the scalp received two epilation treatments at two months' interval. This treatment left a definite area of permanent alopecia and caused extreme dryness of the entire scalp. The eczema has been very bad since, and the patient has had frequent attacks of folliculitis of scalp.

Oscar L. Levin, M.D., Secretary.

PHILADELPHIA DERMATOLOGICAL SOCIETY

Regular Meeting, Jan. 11, 1926

John F. Stokes, M.D., *Presiding*

Acanthosis Nigricans. Presented by Dr. Markowitz.

The patient, a girl, aged 11 years, presented a blackish pigmentation of the skin, symmetrical in arrangement, with exaggeration of natural furrows and papillary hypertrophy. The condition began around the neck and axillae, then extended to the elbow and knee joints and other parts of the body. The duration was from four to five years. Her general condition apparently was good; she complained, however, of paroxysmal abdominal pain, radiating from the splenic region. There was also some moderate itching.

DISCUSSION

Dr. Wright: I agree with the diagnosis. I saw a case in a young girl at Ann Arbor.

Dr. Knowles: I think the case is typical.

Dr. Weidman: In sections from another patient presented before the society with the same diagnosis, there was an excess of keratinous substance. It is not new to see cases in which the keratin becomes black, such as in black tongue and ichthyosis, but some attempt should be made to discover the cause

of the discoloration. I have cultured a case of black tongue, and recovered a streptothrix, which caused a black discoloration on the culture mediums. Other organisms have also been found. I have seen also a case of acanthosis nigricans occurring in a dog, with the same distribution as is found in human beings. If the skin in this case were more erythematous, the appearance would be more in keeping with one of the chronic inflammatory dermatoses. An effort should be made to determine the nature of the pigment in this patient.

Dr. Corson: In the case shown two months ago, in which phenolphthalein poisoning was considered as well as acanthosis nigricans, everything but acanthosis nigricans has been eliminated.

Dr. Stokes: The juvenile type of acanthosis nigricans is not associated with malignancy in the abdomen. In this type we see the transformation into the extraordinary pigmentary dystrophies as described by Wende. He had the opportunity of seeing Wende's two cases, and there was no acanthotic disturbance, but the pigmentary changes were marked. I also had a case in my own service, in which there were pigmentary changes and no acanthotic changes. Wende noticed that when the children were kept in a dark room for a while, the pigmentary changes became lighter, and when brought into the light again, the skin became darker. As to therapeutics, I would suggest feeding desiccated suprarenal gland. I have also seen a case of pigmentation on the vermilion border of the lips alone, and at operation the patient had a huge polyposis of the colon.

Dr. Hirschler: I would suggest the use of ovarian extract.

Dr. Stokes: I agree that endocrine extract should be tried.

Keratosis Blennorrhagica. Presented by Dr. White for Dr. Stokes.

J. C., a man, aged 27, unmarried, a carpenter, presented keratotic plaques on the extremities, especially on the palms and soles. He had had gonorrhea four years before presentation, with treatment, and had been pronounced cured in three weeks. He had had no arthritis at that time and no cutaneous eruptions. The discharge stopped. Three months ago he had a "new" infection, with a discharge for three weeks. Two weeks later, the right ankle and elbow became involved, and the eruption appeared on the feet. Two weeks before presentation the condition in the joints flared up again, and the eruption also became more exaggerated. He had a chancre in 1919, and had received six intravenous injections, and the Wassermann test was negative. Three weeks before another Wassermann test was made, which was positive; this was followed by six more injections. A prostatic smear showed 90 per cent pus, and was positive for gonococci. He had an endocarditis of the mitral and aortic valves when presented. No biopsy had been taken when presented.

DISCUSSION

Dr. Knowles: I have seen only two or three cases of keratosis blennorrhagica, and the lesions were larger and more scaly — they were also not so limited as to distribution.

Dr. Weidman: I agree with the diagnosis. A gonorrheal keratosis from the nature of things is hardly likely to be a pure keratosis, and I would rather expect that basically it would be an inflammatory process. I do not think we should construct a strict symptomatology on the basis of one or two cases. I do not think myself qualified to make the diagnosis on the basis of the skin

lesion alone. The presence of the gonorrheal urethritis and the swollen joints makes me agree that this is a gonorrheal condition.

DR. KNOWLES: I agree that one cannot base a clinical entity on two or three cases. Few persons have seen more than a few cases. The cases that I have seen were practically noninflammatory. The modifications of these lesions may be due to the presence not only of gonorrhea, but of syphilis.

DR. WRIGHT: It is my impression that the case reported by Dr. Keim was even more inflammatory than this one. Keim was unable to demonstrate the organisms at any time.

DR. STOKES: The case Dr. Keim reported was more inflammatory. Observation in that case, over a long period of time, seemed to satisfy every one that it was Neisserian blennorrhagica. The range of variation is considerable. These keratoses show little inflammation — the plaques may be lifted off, slight inflammation and no induration are found under the lesion. The possibility of a syphilid has been considered and discussed.

DR. HIRSCHLER: A patient with acute pelvic gonorrhea had pustules on the thighs. Smears were made from five different locations, and pure gonococci were found.

AINHUM. DR. WEIDMAN.

Dr. Weidman demonstrated a toe amputated from a negro who had ainhum.

ADENOPATHY AND LICHEN SCROFULOSORUM. DR. WEIDMAN.

Dr. Weidman reported that sections from skin and lymph nodes of the patient shown at the last meeting, with adenopathy and lichen scrofulosorum showed classic tuberculosis — not a tuberculid.

A CASE FOR DIAGNOSIS. Presented by DR. WHITE for DR. STOKES.

C. W. S., a man, aged 41, married, white, complained of ulceration of the right side of the neck. He was first seen July 3, 1925, and the ulcer extended from the angle of the jaw to the presternal notch, with a sinus projecting underneath the ramus of the jaw for about 2 inches, into a slightly enlarged lymph node. It had been progressing for twelve months, and began as a small nodule in March, 1923. This was lanced in April, and had continued to drain. Examination for fungi was negative, both in smear and culture. Diphtheroid organisms were found at several different examinations. Wassermann and provocative tests were both negative. Biopsy showed chronic ulcerative tissue only. Guinea-pig inoculation was negative. Tests of the blood and urine were negative. General examination was negative with the exception of four carious teeth in the right lower jaw — these were removed.

The Alpine lamp was used locally and systemically, and one course of neo-arsphenamine was given intravenously. The ulcer healed to one-fourth its size. Economic conditions at home made it necessary for him to leave in October, since which time he has not been treated. The ulceration has now grown to its original size.

DISCUSSION

DR. WEIDMAN: Exhaustive laboratory examinations of the pus, including animal inoculations, were made but the causative organism was not discovered. The best leads that were found were diphtheroids but I am aware of the repute of these organisms. Streptothrices were found but not constantly.

DR. KNOWLES: Clinically, it looks like a scrofuloderm, but the nondiscovery of the organism and the negative biopsy rule that out.

DR. CORSON: Which of the therapeutic procedures seemed to have the greatest effect?

DR. WHITE: I think the Alpine lamp is the most effective.

DR. GREENBAUM: I believe a further search for tuberculosis should be made, especially in the mediastinum.

DR. STOKES: The suggestion of diphtheroid infection should not be laughed at. I saw one case, and four were reported in England some years ago, and another was observed in Memphis, I believe, by the late Dr. Haase, in which pure cultures of diphtheroids were found, and in which there were never any signs of blastomycosis. In the case I saw, the boy died. It might have been that an ordinary saprophytic organism had become implanted on especially susceptible soil. As to therapeutics, I would suggest that antimony intravenously be tried.

CARROLL S. WRIGHT, M.D., Secretary.

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